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## INTRODUCTION

The past fifteen years have seen major developments in the description and analysis of Australian Aboriginal languages. A large number of descriptive grammars have been published (see Walsh (1979:8-10) for a partial listing) and several theoretical topics have been discussed in detail, for example, case-marking and ergativity (see papers in Topic B and Topic D of Dixon 1976, Dixon 1979, Blake 1977 and Silverstein 1981). In addition, some excellent surveys of the field have appeared: Blake 1981, Dixon 1980, Yallop 1982.

During this time, lexicography and dictionary production has lagged behind the study of phonological and grammatical issues. In a seminal article on lexicography in Aboriginal Australia, O'Grady 1971 discussed and evaluated work completed and research in progress for the period 1780 to 1968. In an appendix, he gave a summary listing of forty-nine unpublished dictionaries representing thirty-nine different Australian languages. A mere four of those have been published in the intervening fifteen years. Admittedly, several vocabularies and dictionaries not known to O'Grady have appeared recently (for example Coate and Elkin 1975, Hansen and Hansen 1977 and Heath 1982), however, the number of published dictionaries is small compared to the number of available grammars. In addition, no dictionary of an Australian language published to date could be described as truly comprehensive (cf. Laughlin 1975 or Young and Morgan 1980 for indigenous languages elsewhere in the world).

This situation is set to change in the near future. There are a number of projects currently underway which will see the preparation and publication over the next few years of large comprehensive bilingual dictionaries for a range of Australian languages. Several scholars working on dictionary projects were present at the annual conference of the Australian Linguistic Society held at the Australian National University in 1981. In informal discussions I raised the idea of our getting together to exchange ideas and share experiences. To this end I convened a workshop on Australian Aboriginal lexicography which was held in conjunction with the ALS annual conference at the University of Sydney in August 1982. Eight papers were presented at the workshop which was attended by thirty-five linguists, many of whom had begun or were about to begin dictionary preparation. All the presentations, with the exception of one by R.M.W. Dixon on the Dyirbal dictionary-thesaurus, were written up and appear in this volume.

The workshop focused on production of bilingual dictionaries for Australian languages. Discussants and other participants were presented with a set of topics which I had drawn up and circulated. These topics were as follows:

## 1. General Issues

- (a) *format* - should dictionaries follow an alphabetical listing format or a semantic grouping thesaurus arrangement? What are the advantages of each approach?
- should an Australian dictionary or thesaurus follow the style of European language bilingual dictionaries and thesauruses?
  - should the English-Australian language section be simply a finder-list to the Australian language-English section, or should the two parts be of equal status? Will this depend upon the socio-linguistic state of the language (moribund versus in community-wide use) and upon the needs of its users?
- (b) *users and uses* - who is likely to want to use an Australian language dictionary, and how will this affect its organization, style and scope? Are there particular sociolinguistic issues concerning the use and functions of Australian languages which need to be addressed?

## 2. Specific Issues

- (a) *depth and breadth of coverage* - what is to be included and what left out, both in terms of entries (secret/sacred material, 'rude' words, arcane usage) and definitions (how much like an encyclopedia should the dictionary be)? How are dialect differences and multilingualism to be treated?
- (b) *form of entries* -
- (i) *phonological information* - how are pronunciation and alternative variants handled?
  - (ii) *morphological information* - how are derived stems dealt with? Where do we draw the line between productive derivation (to be excluded?) and non-productive forms? Should derived forms be listed under a root headword (disrupting alphabetical listing) or separately listed?
  - (iii) *syntactic information* - how is category and sub-category information treated? Should syntactic compounds and collocations be separately listed?
  - (iv) *semantic information* - what format should the definitions take - English equivalents or a semantic analysis? How are sense relations (synonymy, antonymy, hyponymy, etc.), as well as metaphor and poetic usage, to be treated? Should scientific classifications (of plants and animals) be included? What about ethnosemantic information?
  - (v) *citations* - are examples to be included from elicited and/or text material? How are examples selected (most representative, common, unusual?), and should all entries have citations?
- (c) *aids to lexicography* - what role can computers and technology play in lexicography? What is the role of the language community?

Each of the papers in this volume, apart from Hale's (see below), was specifically written with one or more of these issues in view.

My paper deals with a project begun in 1981 to prepare bilingual dictionaries for all the languages of the southern Pilbara region in Western Australia. The project is fully computerized and the paper describes methodology and results achieved to date. The contribution by McConvell, Day and Black was presented as a videotape at the workshop and outlines work done by staff and students at the School of Australian Linguistics (SAL) on the preparation of bilingual and monolingual dictionaries for the Meriam Mer language. Although Mir is Papuan (see Wurm 1972) and not an Australian Aboriginal language (and hence the volume title is a slight misnomer), the techniques described could be successfully applied by native speakers to any Australian language, at SAL or other places.

The next three papers deal with languages of Arnhemland. Zorc describes a project he plans to undertake at SAL with native-speaker students of Yolngu. This ambitious project is intended to document all the regional and social dialects of the Yolngu speaking area. Schebeck makes a number of general remarks addressing each of the issues raised in the workshop topics (above) and drawing upon his extensive experience with dialects of the Yolngu language. Sample entries from his Dhangu dictionary are included. Finally, McKay discusses the preparation of a dictionary of Ndjébbana and its role in the bilingual education project he was involved in initiating at Maningrida. This is the only prefixing (non-Pama-Nyungan) language represented in the volume; the complexities of its verb structure and consequent difficulties for lexicography and education are dealt with in some detail by McKay.

The final group of papers are concerned with central Australian languages, particularly Warlpiri. Hale's contribution was originally written in 1979 as an application to the United States National Science Foundation for a project to develop dictionaries for five Aboriginal languages (it was partially funded in 1980). Because of the importance of Hale's project for Australian Aboriginal lexicography and the interest his views on content and presentation are likely to arouse, it was decided to include the paper in this volume. It appears essentially as originally written, having been only lightly edited. A postscript describing progress up to 1983 has been added. Laughren and Nash describe work on part of Hale's project, namely the Warlpiri dictionary. Using a large number of examples they show how the dictionary is organized and how definitions are presented. Notes are also included on their use of computers and there are sample pages produced by a laser printer. Wierzbicka presents a semanticist's views on dictionary definition, drawing examples from the Warlpiri dictionary. She warns of the dangers in bilingual lexicography when the semantic and cultural concepts encoded in one language are imposed upon the other. Laughren responds briefly to Wierzbicka in a note on the form of verb definitions adopted by Hale's project. The final paper by Koch describes the place of etymology and historical linguistics issues in a dictionary, giving illustrations from the Arandic language Kaytej. Koch's paper concludes with an extensive bibliography of historical and comparative dictionaries.

This volume was prepared on a Remington NBI 3000 word processor at La Trobe University. My thanks to Jennifer Barreda of *Pacific Linguistics* for her editorial advice and for arranging for the maps to be drawn. Thanks also to my co-authors for the speed and accuracy with which they prepared their

papers and responded to my editorial comments and queries. The fact that we have been able to put this volume together in just nine months is due in no small measure to their support. My greatest debt however is due to my editorial assistants Kathy Ike and Tim Woolford. Kathy typed almost the whole volume onto the word processor and Tim has been responsible for format, editorial amendments and ensuring that the bibliographies are complete and correct. Thank you both very much and may your disks forever remain uncorrupted.

Peter Austin,  
La Trobe University,  
June 1983.

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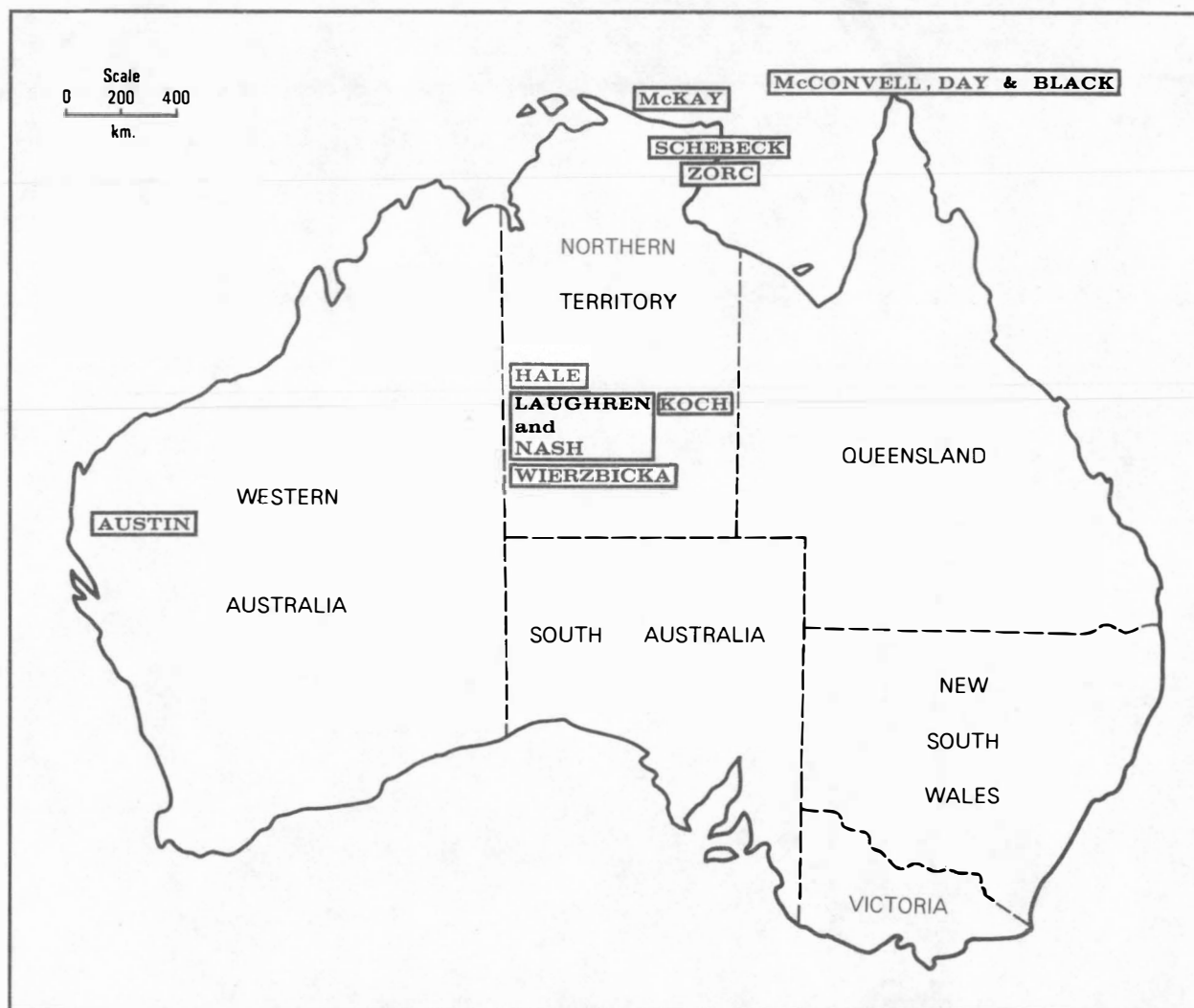
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Map 1: Location of language areas referred to by authors



## SOUTHERN PILBARA DICTIONARIES

Peter Austin

### 1. INTRODUCTION <sup>1</sup>

Since July 1981, I have been engaged in a project to develop comprehensive bilingual dictionaries for the Australian Aboriginal languages spoken in the southern Pilbara region of Western Australia.<sup>2</sup>

The area in which these languages were traditionally spoken is bounded by the Gascoyne River in the south and the Ashburton River in the north (see Map 2). There are nine languages spoken in this region; a tenth, Pinikura, is now extinct and only scraps of information on it have been recorded. On the basis of lexical and grammatical comparisons (see Austin 1981a, forthcoming), the languages may be classified as members of four distinct genetic subgroups:

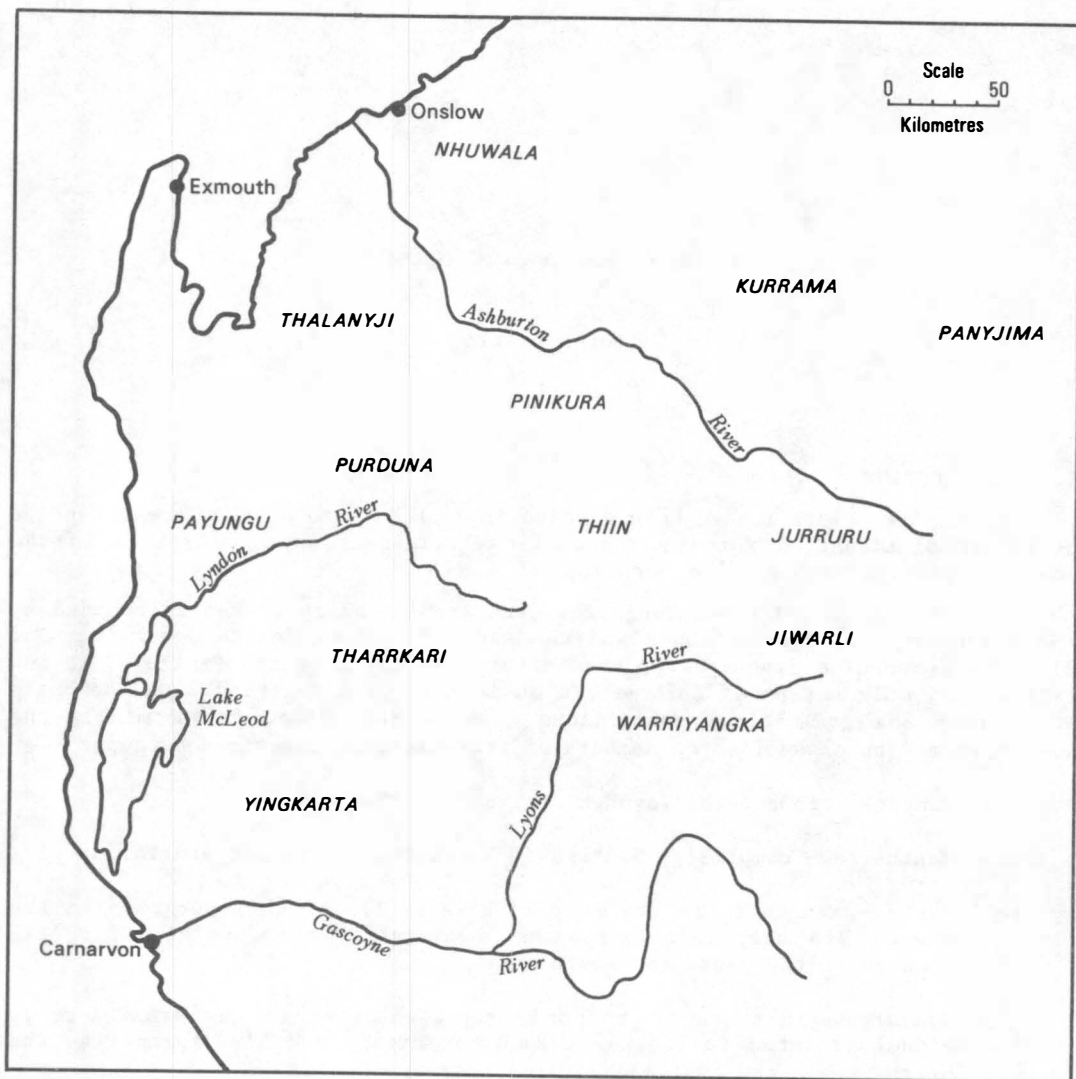
- (a) Kanyara - comprising Payungu, Purduna and Thalanyji;
- (b) Mantharta - comprising Tharrkari, Warriyangka, Jiwarli and Thiin;
- (c) Kartu - Yingkarta is the only representative of this subgroup in the area. Its near relatives, such as Wajarri (see Douglas 1981), are located to the south and south-east;
- (d) Ngayarta - Jurruru is the only representative in the area. It is closely related to languages such as Kurrama and Yinyjiparnti to the north (see Dench 1982 and Wordick 1982).

The more distant genetic relationships of these subgroups have yet to be explored in detail (but see O'Grady, Voegelin and Voegelin 1966).

Data on the languages dealt with in the project comes from two sources: fieldwork carried out by the author in 1978 and 1981 (supported by grants from the Department of Anthropology, University of Western Australia, the Australian

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Map 2: Southern Pilbara languages

Institute of Aboriginal Studies and La Trobe University School of Humanities), together with notes and tape-recordings kindly made available by C.G. von Brandenstein, A. Dench, G.N. O'Grady and T.J. Klokeid. The corpus amounts to several hundreds of pages of fieldnotes and transcriptions plus over fifty hours of material on tape. It includes elicited lexical and grammatical information together with texts for all the languages except Thiin. Further fieldwork with the remaining speakers is planned<sup>3</sup>.

## 2. PROJECT DESIGN

From its inception, the project has been designed to use the facilities of a large (mainframe) computer. The language materials have been prepared and processed on La Trobe University's VAX 11/780 computer, using a number of already available and specially written programs and programmer's tools.

The major advantages of using a large computer in lexicography work are its ability to store and retrieve massive amounts of information and to manipulate it rapidly and unerringly. In addition, the computer can be used to organize and output the final product, either on tape for other scholars to use, or in a printed form through various output devices (see 2.5). The savings in labour are considerable and enable the researcher to spend relatively more time on intellectually demanding tasks (such as writing definitions) than on simple data sorting.

For southern Pilbara languages, production of a comprehensive bilingual dictionary has been divided into four separate tasks:

- (a) preparation of a text collection from which words and examples of their use may be drawn;
- (b) preparation of the main lexical body of the dictionary in which Aboriginal language words with their definitions are given;
- (c) writing an introduction to the dictionary, including instructions on its use;
- (d) production of an English-Aboriginal language finder list so that equivalents of selected English words may be found in the main body of the dictionary.

Each of these tasks is discussed in the following sections.

### 2.1 Texts

The available analysed text materials for each language are entered on the computer into a text file using the VAX full-screen editor EDT. Each record in the file contains a line of text with morpheme boundaries marked by hyphens. In order to collect examples for inclusion in the dictionary (see 2.2), the text files are processed by the Oxford Concordance Program (OCP). This program is an extremely flexible concordance which allows a number of functions to be

specified, including key word in context (KWIC) and word frequency counts (see Hockey and Marriott 1980). OCP has been run on the text files in KWIC function to create a listing of each word in the texts, all examples of that word and a text number and line number reference of each occurrence. The following is an example of the output OCP produced from the Jiwari text file:

*ngurnta-inha*

15 *ngunhi-rru yinikurtila wirripuka mantharta*  
*ngurnta-inha ngunha mampu-martu*

16 *juma-rti purrarti mampu-martu ngurnta-inha*  
*ngurra-ngka wirntu-rru-nyjalu*

43 *ngunha ngurra-thanyu-rru ngurnta-inha*  
*payungu-wu*

Here the word *ngurnta-inha* 'lie-present tense' is listed with the three examples of it found in the text analysed (lines 15, 16 and 43). One or more of these, together with their English translations, may be selected to serve as illustrative examples in the dictionary. Alternatively, if the texts are published at the same time as the dictionary, then just the line numbers may be given (as in Heath 1981). Although I plan to publish the text collections, I have preferred to include the examples in the dictionary in order to save the user either having to constantly refer to a separate volume of texts, or else to miss the examples entirely. The additional bulk of the full dictionary is compensated for by having the relevant data collected together in one place.

## 2.2 Lexical Data

The lexical data for each language has been entered into a second computer file using the EDT text editor.

At the end of May 1983, there were nine computer files, representing an Aboriginal-English dictionary for each southern Pilbara language. They range in size and completeness from the smallest, at approximately 500 entries (25 double-spaced pages of printout), to the largest, at approximately 1500 entries (60 pages).

Records in lexical files are of two types: those for *headwords*, which comprise nominal, verb, adverb or particle roots<sup>4</sup>; and those for *subentries*, which are indented four spaces and which comprise compounds, or derived words produced by suffixation of the headword. All derived words, except for the highly productive comitative ('having') and privative ('lacking') derivations of nominals, are listed in this way.

The material in each language is written in a practical orthography which follows the usual Australianist conventions, using, for example, *th*, *nh* and *lh* for lamino-interdentals, and *rt*, *rn* and *rl* for apico-dentals. For stops, the voiceless symbols *p*, *t*, *th*, *t*, *rt*, *k* are employed (except for Tharrkari and Purduna, which have a voicing contrast and hence also require voiced symbols - see Austin 1981a); this allows *ng* to be used for the dorso-velar nasal without causing confusion with the cluster *nk*<sup>5</sup>. The lamino-palatal stop is represented by *j*, and the nasal and lateral by *ny* and *ly* respectively. There are three phonemic vowels - *i*, *u*, *a* - and phonemic length; long vowels are written double, viz. *ii*, *uu*, *aa*.

Records for headwords are listed in standard English alphabetical order; records for subentries under a headword follow the same order. It was decided to use English alphabetical order, rather than adopt some Australian order, because it is likely that potential users of the dictionaries will be more at home in that format. Literate members of the Aboriginal community are most likely to be literate in English only, and would find a (phonetically or phonemically-based) alternative order difficult to use. For linguists and other scholars, order of listing is not a significant consideration. A thesaurus arrangement has not been adopted at this stage, because it is even less likely to be accessible to potential users, other than academic language specialists (but see 2.2.5 and 3 below).

The records in each dictionary file follow a standard format and are composed of up to sixteen data fields. The first three fields are obligatory (and the fourth is planned to be - see 3 below) and the others optional. The fields are given in the following display and discussed in turn:

Headword/subentry, Category: >Translation, Di., Th., eg.,  
opp., syn., cf., Var., Ety., Cog., Rec., Inf., Eth., Note.

### 2.2.1 Headword and subentry

Headwords are listed in their uninflected root form, except that for verbs an indication of conjugation membership is given. This is preferably done by suffixing the root with a hyphen plus an inflection which has distinct forms for each conjugation class, rather than using some numerical or other device. Thus, in the Mantharta language dictionaries, the purpose-same subject suffix is used to mark membership of one of the five conjugations. This is the inflection attached to a verb of a purpose clause whose subject is coreferential with the main clause subject; the forms are *-ru*, *-ruu*, *-yi*, *-ngku* and *-a*.

Subentries are of two types: compounds made up of two freely occurring roots, and derived stems. Compounds are listed under both constituent elements, for example, Jiwarli *yurta mara* 'back of the hand' occurs under both headwords *yurta* 'back, dorsum' and *maru* 'hand'. All derived stems, except for comitative and privative, are listed, including derivations which do or do not change syntactic class. The derivational suffix is set off from the root by a hyphen, and, in the case of verb stems, followed by a hyphen plus the conjugation mnemonic. An example is the Warriyangka entry:

*parla*, N: >closed, >deaf, >blunt  
*parla-rla-ru*, Vtr: to >close  
*parla-rri-a*, Vi: to >close, to >clench (as fist)

### 2.2.2 Category

The category field contains an abbreviation giving the syntactic category (part of speech) of the headword or subentry plus any subcategory information. The categories are:

Adv	adverb
N	nominal (includes nouns, adjectives and quantifiers)
Name	personal and place names
Part	particle (includes sentence particles and interjections)
V	verb

Subcategory information is given for verbs in the form of a lower case abbreviation following V, as:<sup>6</sup>

Vi	intransitive verb, taking one argument (intransitive subject), for example, Warriyangka <i>ngurnta-yi</i> 'to lie' (see also <i>parla-rri-a</i> in 2.2.1 above).
Vm	middle verb, taking an intransitive subject plus a dative case-marked argument, for example, Jiwari <i>yarukarri-a</i> 'to want, to like'.
Vtr	transitive verb, taking two arguments (transitive subject and transitive object), for example, Thalanyji <i>paja-lkin</i> 'to eat, to drink'.
Vdi	ditransitive verb, taking three arguments, one marked like a transitive subject and the other two marked like transitive objects, for example, Thalanyji <i>wantha-rkin</i> 'to give'.

Category-changing derivations may be discerned from the different abbreviations assigned to a subentry and its corresponding headword.

### 2.2.3 Translation

The translation field contains one or more English words which are the translation equivalents of the headword/subentry. Multiple possible translations are separated by commas. Definitions in terms of some semantic analysis have not been attempted (cf. Hale, Laughren and Nash, Wierzbicka, this volume), but rather all possible English translations, either supplied by the language consultant or suggested by the contexts in which the word has been observed to occur, are given. English words which are to be used to construct the English-Aboriginal language finder lists are preceded by an index flag >, which is picked out by the reversal program (see 2.4). Any word which could possibly need to be included in the finder list is flagged.<sup>7</sup> Selectional restrictions which are not clear from the English translations are given in parentheses, for example, 'to blow (of wind)', 'to dance (of women)' or 'to lie (of inanimates)'. Translations phrased in terms of local Australian or Aboriginal English idioms are enclosed in quotation marks, for example, "Java sparrow" (for 'Zebra finch') (see also *pajapurtu* in 2.3).

The scientific classification of plants and animals which have been reliably identified follow their English names. Standard flora and fauna reference manuals together with picture books have been used for identification. These will be listed in the front matter of the dictionary (as Schebeck, this volume, suggests). During further fieldwork on the project, collection of plant specimens may lead to new or confirmatory identifications. For plants and animals whose identification is unsure, any information on salient characteristics (shape, size, colour, habitat) given by the language consultant is included in the Note field (see 2.2.14). Two Jiwarli examples illustrating this are:

*kalpa*, N: >bronzewing >pigeon (*Phaps chalcoptera*)

*jirrinyja*, N: >spinifex >lizard, Note. brown in colour with a black chest

### 2.2.4 Dialect

Where it is clear that dialectal differences within a language exist, then this field contains an indication of the dialect affiliations of the headword (subentry affiliations are predictable from this). Because the dialect situation in most southern Pilbara languages is unclear, this field remains unfilled in most instances (see also 2.2.12 below). However, for Yingkarta, it is obvious that two clear dialects exist: Northern Yingkarta (NY) and Southern Yingkarta (SY); see Austin (forthcoming) and Dench 1981 for details. Where a form belongs to one dialect and the other dialect has a different form, then the field Var. (for variant, see 2.2.8) is filled as a cross-reference. This gives three types of entries: those where the word is known in only one dialect, those where it occurs in both, and those where the two dialects have different words. The following Yingkarta entries show how the three possibilities are coded:

(i) *mirrkirta*, N: >grasshopper, Di. SY

(ii) *marlu*, N: >plains >kangaroo, Di. NY, SY

(iii) *mamparra*, N: >woomera, >spear thrower, Di. NY, Var. SY *mirru*

If desired, dialect dictionaries may be created by programming the computer to select all entries flagged for a particular dialect.

At a later stage, when the comparative dictionaries data base is being prepared, this field will become obligatory (see 3 below).

#### 2.2.5 Thesaurus

The thesaurus field has been set up so that entries may be flagged with one or more taxonomic classificatory labels, say, following the classification of the Australian Institute of Aboriginal Studies standard word list (Sutton and Walsh 1979), or the wordlists in the '*Handbook of Australian Languages*' (see, for example, Dixon and Blake 1979). A computer program could then be written to draw together items with the same or related labels in order to generate a thesaurus. At present, this field is unfilled, but I plan to design and test a taxonomy to be applied to all the southern Pilbara languages in future work.

#### 2.2.6 Examples

Many entries in the dictionary files have one or more examples illustrating the use of the headword or subentry in context. These examples come from elicited data or are drawn from the text files after processing by OCP (see 2.1). The number of examples included in a record varies from one to five. The aim of including examples is to show typical instances of word use to give the dictionary user an idea of the range of meanings and functions of the word in context. As more texts are collected, analysed and processed, more entries will have examples and the examples will be more representative. My ultimate aim is to have examples for all verbs at least, and preferably for as many entries as possible.

Sample entries illustrating these points may be found in 2.3 below.

#### 2.2.7 Cross-references

There are three fields set aside for coding cross-reference information. These are syn. for synonyms, opp. for antonyms and cf. for all other relationships, including sense relationships such as (co)hyponymy and complementarity, as well as culturally relevant relationships. Thus, in the Jiwari file, the entry for *jirrama* 'spotted goanna' has a cross-reference to all the other goanna types:

*jirrama*, N: >spotted >goanna, cf. *jirtarra*, *wiriji*, *wirrkura*, *yungkurrji*

Also, the entry for *pirru* 'meat, edible animal' has a cross-reference to *thurnti* 'vegetable food', and vice versa. Further examples may be found in 2.3.



## 2.2.8 Variant

Here are listed dialect variants (see 2.2.4) and alternative pronunciations which are not dialectally distinguished.<sup>8</sup>

## 2.2.9 Etymology

The etymology field is being used currently for only three dictionaries, namely *Purduna*, *Tharrkari* and *Jurruru*. The first two languages are notable in having undergone a number of striking phonological changes which have resulted in their having unusual word forms for languages of this region (see Austin 1981a for details). Thus, the *Purduna* entries include their proto-Kanyara etymology, as in:

*yaan*, N: >spouse, Ety. pK \**yakan*

and the *Tharrkari* entries their proto-Mantharta ancestral form:

*kardayi*, N: >night, >dark, Ety. pM \**kartaju*

In the case of *Jurruru*, O'Grady's 1966 proto-Ngayarta reconstructions are listed to demonstrate the northern affiliations of this language. Examples are (see also 2.3):

*patha-nma*, Vtr: to >throw, Ety. pNg \**patha-R*

*warnpi-nma*, Vtr: to >hit, Ety. pNg \**warnpi-L*

At this stage, I do not envisage extending etymological information to the other languages (which essentially reflect their ancestors unchanged), or including etymologies of greater time-depth (such as O'Grady's 1966 proto-Nyungic, proto-Pama Nyungan or proto-Australian forms; but see also Koch, this volume).

## 2.2.10 Cognate

The cognate field is used to list words which are similar in form and meaning to the headword or subentry and which occur in neighbouring languages (including proto-languages) either not immediately related to the language in question or else outside the southern Pilbara region<sup>9</sup>. The search for cognates has been restricted to localized comparisons and does not extend in depth or geographical coverage to that seen in Koch's work on *Kaytej* (see Koch, this volume). Examples from the *Yingkarta* file will illustrate the use of this field. Here *Wajarri* cognates (from Douglas 1981) are given; if the form and meaning are identical then the field simply contains the cognate language name. Examples are:

*maka*, N: >head, Di. NY, SY, Cog. *Wajarri*

*miniyarra*, N: >centipede, Di. SY, Cog. *Wajarri miniyara*

*mimpurtu*, N: >chest, Di. SY, Var. NY *ngaany*, Cog. *Wajarri mimpurtu*  
breastbone (sternum)

The inclusion of cognates may point towards possible borrowings across language groupings. The following examples illustrate this nicely. Here the northern dialect of Yingkarta shares a cognate with Payungu (to its north) while the southern dialect has a form with a cognate in Wajarri:

*mamparra*, N: >woomera, >spear thrower, Di. NY, Var. SY *mirru*, Cog. Payungu  
*mirru*, N: >woomera, >spear thrower, Di. SY, Var. NY *mamparra*, Cog. Wajarri

Loans from English are also listed in the cognate field. The source of the English loan is also given if it is not obvious. An example from Purduna is:

*mijiji*, N: >white >woman, Cog. English loan from missis (Mrs)

#### 2.2.11 Recorder

The name of the linguist who recorded the particular item is given, together with the form recorded if it disagrees with my transcription. Words taken down by amateurs (such as the contributions in Curr 1886) are also included here. An example from the Payungu dictionary will illustrate this field (see also the Jurruru entry for *pajapurta* in 2.3):

*mannga*, N: >swamp, Rec. PA, *marnga* claypan O'G

#### 2.2.12 Informant

Here the name of the language consultant who supplied the form is given. This field is useful if, as is the case with Thalanyji for example, dialectal variation is suspected but has not been clearly delineated. Informants who consistently agree on certain key words may be grouped together at a later stage as speakers of one dialect (and distinguished from others).

#### 2.2.13 Ethnographic Information

Included in this field is information relating to traditional practices or beliefs about the object or activity denoted by the headword or subentry. Thus, medicinal plants have their uses described here, as in the Jiwarli entry:

*kujimpurr*, N: >bush type, Eth. the leaves are crushed and placed on the ears to draw out matter and relieve earaches, Note. has yellow flowers, the leaves are astringent and can burn the skin if rubbed hard.

The ethnographic fields can be drawn together by a computer program to be used in writing an ethnographic sketch for the group.

#### 2.2.14 Note

The final field lists any additional information not properly included under one of the other fields discussed above. This could be notes on characteristics or habitat for unidentified fauna or flora (see 2.2.3), as in the Jiwarli entry for *kujimpurr* in 2.2.13 above and:

*jalyurta*, N: >bush type, Note. grows in thickets, has spiky leaves and edible fruit.

Also noted are possible cognates (see Jurruru entries for *paralyji* and *parrurluwa-nma* in 2.3 below) and forms requiring further checking.

#### 2.3 Sample Entries

The following is a set of entries from the Jurruru file illustrating the format outlined above:

*paja-nma*, Vtr: to >drink, eg. *pipi pajalyanga* He is drinking milk,  
*parlurarriyangarru ngathu papa pajarnanganti* I am sated after having  
drunk water, Ety. pNg \**paja-L*, Cog. pKpM, Rec. O'G, Inf. BW

*pajapurtu*, N: >agressive, >"cheeky", Cog. pK, Rec. AD, *pacapurtu* O'G, Inf.  
BW, JB

*paka-ma*, Vi: to >fall (of rain), eg. *papangka pakayangala* Rain is  
falling, Rec. O'G, Inf. BW

*pakupaku*, N: >bellbird, Cog. pK, Rec. AD, Inf. JB

*palku*, N: >thigh, cf. *wulu*, Rec. O'G, Inf. BW

*panaka*, N: >section >name, cf. *karimarra*, *palyarri*, *purungu*, Rec. AD, Inf.  
JB

*pangku*, Name: >Seven >Sisters >constellation, Rec. O'G, Inf. BW

*papa*, N: >water, >rain, cf. *paka-ma*, Ety. pNg \**papa*, Cog. pM, Rec. O'G, Inf. BW

*papa-nyara*, N: >claypan

*papu*, N: >father, cf. *pipi*, Cog. pKpM, Rec. O'G, Inf. BW

*papu-ju*, N: >my >father

*paraly*, N: >smooth, Rec. O'G, Inf. BW

*paralyji*, N: >seagull, Rec. AD, Inf. JB, Note. Compare with pK, Jiwari  
*pararrji* seagull (*Larus novae-hollandiae*)

*parlkanthi*, N: >brown >snake, Rec. AD, Inf. JB, Note. Compare with Jiwari  
*palkanthi* poisonous brown snake

*parlu*, N: >stone, >hill, >money, Ety. pNg \**parlu*, Cog. pM, Rec. O'G, Inf. BW

*parlura*, N: >full, >sated, opp. *kamu*, Cog. Warriyangka, Rec. O'G, Inf. BW, Note. Payungu *parlurra* full, sated

*parlura-rrri-ma*, Vi: to >become >full, to >become >sated, eg.  
*parlurarriyangarru ngathu papa pajarnanganti* I am sated after  
having drunk water

*parna*, N: >head, Cog. pKpM, Rec. O'G, Inf. BW

*parnti-nma*, Vtr: to >smell, Ety. pNg \**parnti-L*, Cog. pKpM, Rec. O'G, Inf. BW

*parru*, N: >fighting >stick, Rec. AD, Inf. JB

*parrurluwa-nma*, Vi: to >bark, eg. *yukurru parrurluwarnu* The dog is barking, Cog. Jiwarli *parrulka-yi*, Thalanyji *parrulka-yin*, Rec. O'G, Inf. BW

*parturra*, N: >bustard, >wild >turkey (*Eupodotis australis*), Ety. pNg  
 \**parturra*, Cog. pKpM, Rec. AD, Inf. JB

## 2.4 Front Matter

A third computer file will contain the material to be placed at the front of the dictionaries. This will include an introduction to the language and its speakers, sources, information on sociolinguistics and dialect/comparative-historical relationships, a map, a grammatical sketch (with nominal, pronoun and verb paradigms), a list of abbreviations, and instructions on format and how to use the dictionary. Partial files of this type have been begun for some dictionaries but none is yet complete.

## 2.5 Finder List

The main body of the dictionaries is seen to be in the Aboriginal-English lexical section. The English-Aboriginal language section is designed as a finder list to that part. Users will be encouraged to return to the first part of the dictionary for full details of the Aboriginal entry when looking up the correspondents of English words.

The finder list is generated using a computer program to pick out all English words preceded by the index flag > and alphabetize them with the corresponding language headword or subentry. Dr Thomas Richards, Department of Philosophy, La Trobe University has written a LISP program, DICT (see Richards 1982), which accomplishes this task. In its current form the program does not deal efficiently with words where the English equivalent is a phrase. For example, the Jurruru dictionary contains the entry (see also 2.3):

*parru*, N: >fighting >stick

This should appear in the finder list under both 'fighting stick' and 'stick, fighting'. The second of these requires a word order manipulation within the English definition and DICT has to be further refined to achieve this.

## 2.6 Computer Output

A major advantage of using computers in lexicography work is that files may be output and distributed in various ways, either in the form of magnetic tape or hard copy produced by a line printer (including laser printers, see examples in the appendix to Laughren and Nash, this volume). Also, VAX files may be sent to a word processor (such as the NBI 3000 used for this volume) or a linotype phototypesetting machine to produce camera-ready copy for publication. Inclusion of format commands in the files enables automatic selection of typeface and layout as desired. Using graphics software it is also possible to include pictures and diagrams in the finished product.

A second advantage is that computerized production eliminates the chore of tedious retyping while reducing the chance of errors introduced in the typing process by a typist who may be unfamiliar with format or the languages concerned. There is a corresponding saving in time and labour costs.

## 3 FUTURE DEVELOPMENTS

The data on southern Pilbara languages is currently stored on the computer in a set of sequential files. This is a relatively inefficient method of information storage and retrieval because of the nature of sequential file structure. In the near future it is planned to convert the project to a data-base management system. A data-base is (essentially) a linked set of key indexed files and is a much more efficient method of information management. Each of the fields in the present records (see 2) will reside in a separate indexed file which will be linked to the other fields by pointers. This improves retrieval speed as well as greatly facilitating sorts by any field (or combination of fields) for any selected parameter(s). It is planned to have one data-base for each language group, thus approaching the 'comparative dictionary' type described by Koch, this volume. Under this arrangement, each word will be flagged for the language (and dialect) to which it belongs.

A further consequence of the data-base arrangement is that improved flexibility in selection of (linked) files for output enables a number of different types of dictionaries to be generated, ranging from a full-blown encyclopaedic dictionary including all possible information, to a simple wordlist containing just headwords/subentries, syntactic category and English translation (such as would be of use in schools). Various types of thesaurus and specialist dictionaries could also be generated in this way. The users, including the Aboriginal community, can then select the type of dictionary they want for their particular needs.

Tom Richards is currently developing the software needed for the data-base system. This will be tested and refined using the southern Pilbara materials and made available for other dictionary projects.

## FOOTNOTES

<sup>1</sup> For assistance and advice concerning computer aspects of the project, I am grateful to Tom Richards, Department of Philosophy, and Tim Woolford, Division of Linguistics, La Trobe University. Needless to say, neither of them can be held responsible for any mistakes I have made in implementing their suggestions. The project has been supported by funds from La Trobe University School of Humanities Research Grants Committee and the Australian Research Grants Scheme.

<sup>2</sup> The methodology developed for southern Pilbara languages has also been used to produce dictionaries of languages spoken elsewhere in Australia which I have been studying, namely Diyari and Ngamini (northern South Australia), and Gamilaraay (northern New South Wales).

<sup>3</sup> For their willingness and patience in teaching me their languages I am indebted to Dolly Butler, Jack Butler, the late Hamish Cameron, George Cooyou, Tom Darby, Donald Eagles, Helen Hayes, George Hughes, Jack Speer and the late Donald Willering.

<sup>4</sup> Pronouns and demonstratives do not appear in the main body of the dictionary but are listed in tables in the introduction (see 2.3).

<sup>5</sup> For Gamilaraay it has been decided to use voiced symbols only (since the primary allophones of the stops in that language are voiced). To avoid confusion, the nasal-stop cluster is represented as *n.g* and distinguished from the nasal *ng*.

<sup>6</sup> In the Diyari dictionary it is necessary to give further information on the subcategorical morphosyntactic properties of verbs, such as the syntactic behaviour of transitive verbs when the derivational suffix *-thadi-* is added (see Austin 1981b for details).

<sup>7</sup> It is always possible for items placed in the finder list to be deleted if they are found later to be redundant. Problems arise when insufficient information is included.

<sup>8</sup> In Diyari, words beginning with *th* may be optionally pronounced with *j* when there is a lamino-palatal consonant later in the word (Austin (1981:18)). Such variants are cross-referenced in this field.

<sup>9</sup> In the Gamilaraay dictionary, cognates are given for Yuwaalaraay (Williams 1980), Wiradjuri and Ngiyambaa (Donaldson 1980).

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## MAKING A MERIAM MIR DICTIONARY

Patrick McConvell, Ron Day and Paul Black

### 1. INTRODUCTION

The following is an edited transcription and description of a videotape "Making a Meriam Mir Dictionary" recorded in June, 1982, at the School of Australian Linguistics, Batchelor, N.T. (part of Darwin Community College). It is a record of some of the work being undertaken by a group of Murray Island (Mer) students who were then doing first level of the Certificate of Literacy Work at S.A.L. The students taking the course and participating in the video were Ron Day, Nee Wailu, Salkal Gisu, Balaga Zaro, Kalina Kudub and Rita Lui. The video was directed and recorded by Patrick McConvell, with assistance from Paul Black (both lecturers at S.A.L.).

### 2. AIMS OF THE DICTIONARY PROJECT

One of the students, Ron Day, describes the students' aims in coming to S.A.L. in the following terms, in Meriam Mir:

"Ki tabakiauda able mir baratkem a erwerem. Muige kerbi  
erwerge ki able ziawali mir baratug ziawali dirsireda."

This, translated into English, means:

"We came here to study linguistics, and in our studies, as  
part of what we are doing, we are preparing a dictionary of  
the Meriam language."

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Peter Austin, ed. *Papers in Australian linguistics* No. 15:  
*Australian Aboriginal lexicography*, 19-30.  
*Pacific Linguistics*, A-66, 1983.  
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Ron goes on to explain the students' reasons for wanting to make a dictionary:

"There are a few reasons why we are here. One is because the language itself is gradually dying out. Children today don't know how to read or write Meriam. We are trying to get all the knowledge of the language together, and confirm the language, the orthography and all this kind of thing. This is one reason why we are doing a dictionary. Another one would be because we have some people doing research or anthropologists around the islands sometimes. Whatever they discover, if they want to share it with the Islanders, the dictionary would be a great help to them to interpret their discoveries, using the Meriam language."

### 3. PRELIMINARIES TO COLLECTING ENTRIES

One of the first tasks was to decide on the orthography to be used, and for everyone to get familiar with it. There is a literary tradition in Meriam Mir of a small number of books (translations of parts of the Bible, hymn books and so on) dating back to the late nineteenth century. These use a near-phonemic orthography similar to that used by missionaries for Pacific Island languages. At the turn of the century, Islanders such as Passi were producing lengthy manuscripts in Meriam Mir (Ray 1907). The same orthography, with only very minor changes, was used in writing dictionary entries. It consists of: bilabial stops *p b*; alveolar stops *t d*; velar stops *k g*; alveolar fricatives *s z*; bilabial nasal *m*; alveolar nasal *n*; alveolar lateral *l*; alveolar tap *r* and a labio-velar semi-vowel *w* (*i* is used to indicate the palatal semi-vowel). There are five vowels: *i u e o a*. Stress (high tone) is indicated by an acute accent over the vowel or by an apostrophe preceding the stressed syllable (see below).

The letters of the alphabet were divided up between the six students. Each student had a file box and 3 x 5 inch file cards. Each person had to write down on the cards the dictionary entries for words beginning with his or her own letters. After each person has handled one box for a reasonable time, the boxes were swapped around. This gave the students a chance to familiarise themselves with the whole alphabet, and also to check on the work of the others.

Rita Lui, for instance, was responsible for the file box for letters *R, S*, and *T*, so she was the one who wrote the word *teur* on a card. We shall use the word *teur* to illustrate how items are entered on the dictionary file cards.

## 4. THE DICTIONARY FILE CARD

It was important that all the students followed the same plan for writing information on the cards. We used lined file cards with a red line at the top and a larger gap above that. The dictionary entry (Meriam Mir word) was written in the top left-hand corner, above the red line, and was followed in brackets by an abbreviation of its word-class (or part of speech) membership. In the case of our example, these two elements were respectively *teur*, and (N), standing for Noun, since *teur* is the name of a fish.

Since we were here first making a bilingual dictionary, we next wrote the definition of the word in English on the second line below the red line. Often we could not write a full definition immediately; instead we approached it by successive approximations. For *teur*, for instance, we simply wrote a wide generic term, 'kind of fish', because that was all we could say about it at the time. Later we found out from a book that the common English name of this particular fish is 'stripey'; we then added this to the card. After that we also discovered, from a technical book, that the scientific name of the fish is '*Lutjanus Carponotatus*'. We added this to the card also.

There are quite a number of homonyms in Meriam Mir, especially in monosyllabic words. *Teur* happens to be one; as well as the name of a fish, it is also the name of a type of bamboo.

Initially we put such words on the same cards with indexes (1) for the fish name, and (2) for the bamboo, in the case of *teur*. It was often difficult to decide at the outset whether the words were truly unconnected homonyms, or whether one meaning represented a semantic extension of the other. It is the latter case where we should really record the two items as senses (1) and (2) on a single card.

The policy for the present task was to write homonyms and extensional meanings indiscriminately on a single card to begin with, then to transfer the information about one of the items to a separate card, if and when it became clear that it was a true homonym.

So, *teur* (2) (the bamboo) was initially written on the same card as *tuer* (1) (the fish). A generic meaning was first written (as with the fish): 'a kind of bamboo'. Since no books or experts on bamboos were available at the time, no English or scientific name was known, so some of the characteristics of the specific bamboo *teur* were recorded, as an aid to later positive identification: 'big, with large hole'. This was followed by 'sp?', which means 'species unknown', at that stage.

Information on *teur* (2) (the bamboo) will probably later be transferred onto a different card, and erased from the original card (students were encouraged to work in pencil). However, when this is done, cross-references are recorded on the original cards, pointing out the existence of the homonyms. Synonyms are also cross-referenced on both cards, by writing in brackets ( = [the synonym]) after the word class membership on the top line. Neither *teur* (1) nor (2) have synonyms, but large number of items do, including some fish names, for example, *koit* = *mamam lar*, 'coral trout'.

## 5. COLLECTING THE WORDS

Basically, three ways of finding words for the dictionary entries were used:

- (1) a method based on the *sound* of the word;
- (2) a method based on the *meaning* of the word;  
This method mainly involved looking in detail at a particular semantic field (to continue our example, the fish family), and compared the meanings of the different words within the field (for example, *teur* 'stripey' and *kar* 'blue tusk fish').
- (3) a method based on picking words from texts - stories that the students were writing themselves or transcribing from stories recorded from other people. Sentences from these stories could also be used as examples of the usage of the words, and themselves written on the card, or a textual reference recorded.

Thus, *teur* was actually collected by method (2), inspection of the semantic field, but it could equally have been gleaned from a sentence in a text such as the following:

- (1) *ka no teur digwati able kige*  
I only stripey caught that night LOC  
'I caught only stripey last night.'

One technique used in method (1) (the sounds of words) was to go through the possible combinations of letters that can form words in Meriam Mir, in alphabetical order, and pick out those combinations which are actual words. To help with this, we sometimes used a 'word generator'; several sets of cards on a single spiral binding, each set of which can be leafed through separately. The cards were:

- (a) first, the set of consonants plus a blank card;
- (b) second, the set of vowels;
- (c) third, the set of consonants and vowels, plus a blank card.

With this three-set generator, all monosyllables could be generated: vowel or consonant initial; open or closed syllable; single vowel or diphthong final. Additional word generators were made to produce disyllables and longer words.

The word generator was used by systematically going through 'possible words' in alphabetical order, and recording those which actually occur. Ron Day gave an illustration of this by going through monosyllables with three letters having initial *ba-*.

Of the 'possible words' which are in conformity with Meriam Mir phonotactic constraints, a high proportion are found to be actual words. For monosyllables beginning with *ba-*, the following were recorded:

*bab* 'father'  
*bad* 'a sore'  
*bag* 'cheek'  
*bak* (1) 'bed bug'  
       (2) 'place name on Mer'  
*bam* (1) 'turmeric'  
       (2) 'yellow'  
*bar* 'North-west wind season'  
*baz* 'cloud'

As the students went through the words collected, they were also able to compare them with a Meriam vocabulary collected by Sidney Ray on the Cambridge Anthropological Expedition to the Torres Straits at the turn of the century (Ray 1907).

## 6. DICTIONARY WORK AND PHONOLOGICAL ANALYSIS

The exercise of collecting words according to their sound sequences also led into areas of phonology. It gave an idea of which combinations of letters (phonemes) were possible and which were impossible as words (that is, we learnt about phonotactics). It also provided a large number of examples of words of different shapes, and combinations of phonemes, against which we could test our tentative phonemic analysis.

One particular problem which concerned us was whether Meriam Mir really has five vowel phonemes, as the old orthography suggests, or more, and what the significance of stress was.

By having the entries on cards, we could sort the cards in different ways to look into different problems. For example, we wanted to find out if the a vowel had the same phonetic realization in different environments. As one test of this, the cards with a vowels in monosyllables were pulled out, and photocopied on one sheet. Then one of the students, Salkal Gisu, read out the words slowly to the other students to see if they could hear a difference in the a vowel.

Minimal pairs involving stress/pitch differences were also noted when compiling the dictionary. Such stress/pitch differences had not previously been written in Meriam Mir, although there are a fair number of minimal pairs, such as:

<i>tábo</i>	snake
<i>tabó</i>	neck

(Acute accent indicates primary stress/high pitch here.) Such pairs were recorded on the two tracks of Language Master cards, for ease of comparing the members of the pair visually and aurally. Since the most common (unmarked) stress pattern is for primary stress to fall on the second syllable, this type was left unmarked, but all items in the dictionary with stress on the first

syllable were marked either with an acute accent on the first vowel, or an apostrophe preceding the first syllable (the latter being easier for ordinary typewriters and printing purposes). Examples are *tábo* or '*tabo* for 'snake' versus *tabó* for 'neck'. Since ambiguity is usually resolved by the context, the students do not normally use a stress diacritic in everyday writing of stories and so on, but try to use it consistently in dictionary entries.

As well as the distinction between first- and second-syllable stressed items in disyllabics and polysyllabics, there is also a related distinction in monosyllables which has to be recorded on the dictionary cards. There are pairs which appear to be homonyms (at least with younger speakers) if only the plain citation forms are considered. An example is:

*pim* (1) grasshopper

(2) finger

However, if inflected or derived forms of such nouns, with suffixes, are also examined, a distinction appears both of first versus second syllable stress, and (probably determined by this) vowel quality. For example, there are two ergative forms of *pim*:

*pím-ide* ['pimIde] grasshopper-ERG

*pim-íde* [pI'mide] finger-ERG

To indicate this difference in the two items *pim*, a stress mark is used on the entry for *pim* 'grasshopper' - *pím* or '*pim* - to indicate that, unlike the word for 'finger', it has initial stress in suffixal forms.

Another case in which such differentiation of first and second syllable stress is necessary is in reduplicated adjectives, usually derived from nouns. An example of this is the word *ídid* 'charmed', from *íd* 'a charm' (note stress marking). This reduplicated form is a member of a minimal pair with *idid* (second syllable stress) 'alive'.

## 7. DEFINITIONS AND SEMANTICS

The words *íd* 'charm' and *idid* bring us to aspects of definition, which can be particularly hard where the word is bound up with cultural concepts which are themselves hard to express in English. They may require quite long explanations, instead of, or in addition to a short English gloss. Such words are usually best approached through a detailed consideration of the semantic field involved: our method (2) above.

Ron Day gave the following explanation of *íd* and *idid*, which he himself admitted, only touched the surface of the concepts involved:

"*íd* is like a charm, but it's not really a charm. It usually refers to a kind of protection. In the old days at Murray Island, they used to worship a pagan god called *Malu Bomai*. To go fighting in the wars, or even swimming or diving, they used to carry the *íd* for protection. If you double it, to make *idid*, that would mean that, for instance,



if I go swimming, I'll be sure that I'll be in safe hands -  
I won't be attacked by sharks or anything like that -  
because I'll be under the protection of *Malu Bomai*. The  
water would be *idid*."

In making the Mer dictionary, as well as discussing the conceptual field around certain sets of words in terms of the Mer culture, we also made extensive use of illustrated reference books on fish, birds and plants. This helped the students with identifying the species, finding the English gloss and scientific names. By using several different works, a fairly comprehensive and accurate coverage of at least one area, that of fish names (McConvell 1983), has been achieved. The students hope to cover other semantic fields in this way later.

#### 8. EDUCATIONAL SPIN-OFFS OF THE DICTIONARY WORK

As progress was made with the basic dictionary work, other projects developed from it. Some of the results of these projects will be used in educational and literacy work on Murray Island. Although the Meriam Mir language is currently not used in school on the Island, there is a move amongst the Islanders to introduce it.

One of the projects was a simple illustrated alphabet book of 'Fish Names' - *Gurira Lar* (sea fish). The students also made simple small-sized caption books, one on the theme of creatures of the sea. For younger learners, simple matching games were made, designed to teach both reading in Meriam Mir and identification of species using the Meriam Mir names. One of these games involved a board in which fish names appeared on one side and pictures of the fish on the immediate reverse position, with a small hole next to the word and picture, through which a pencil could be poked. Pairs of children could either:

(a) test reading by having one child look at and call out the fish name and another child, facing him/her on the other side of the board, poke the pencil through the hole next to the relevant word; or

(b) test species identification by having one (literate) child read the word out and the other poke the pencil through the hole next to the relevant picture.

Another game involved matching cards in which half a picture of a fish was on one side of a card and half the word for that fish on the reverse. Children would have to match the two cards for the two halves of the words together and check if it was correct by turning over the two cards and seeing that the two halves of the fish-picture also matched.

The spelling game 'Scrabble' was also played, using tiles designed for the Meriam Mir alphabet. The 'Scrabble' board and tiles were also used to construct crosswords. One crossword was made specifically to include only fish names, and was published in our School of Australian Linguistics newsletter (*Ngali*, June 1982).

Making a crossword raised a lot of interesting questions about approaches to dictionary making, since the information in the 'clues' to a great extent paralleled the information to be recorded in the dictionary entry. This would include both elements on the definition and information about synonyms and homonyms; for example, one clue in the crossword is *mamam larira nerut nei* 'another name for *mamam lar* (coral trout)'.

## 9. THE MONOLINGUAL DICTIONARY

This exercise was particularly valuable when we started to work on the monolingual dictionary, making Meriam Mir definitions of Meriam Mer words. Crossword clues were refined, and essential elements of definitions selected. The Meriam Mir definitions were recorded on the reverse of the bilingual dictionary card. For instance, on the back of the card for *teur* 'stripey' (our earlier example), the following was written:

- (2) *teneb-ira*    *kaimeg*    *bambam*    *warwar*    *lar*  
 snapper GEN 'mate'    yellow REDUP    stripe REDUP    fish  
 'a fish with yellow stipes, companion of *teneb* (snapper)'

This English translation does not adequately convey the meaning of the Meriam Mir definition, which involves some concepts whose basis is not the same as concepts in English. On the right hand side we have *lar*, the generic term, translated here as 'fish'. However, *lar* can also be translated 'meat', and includes (in one of its senses at least) also turtle and dugong; but it may also be used to refer to inedible fish (that is, those which are not meat). The generic term for vegetable food, *lewer*, also displays a possibly parallel polysemy, since it also means (specifically) 'yam'. Investigations of the semantics of these fields, in contrast to English, are being continued by the students.

A high-level generic term, such as *lar*, is usually included in a Meriam Mir definition, as well as, on many occasions, a lower-level generic hyponym; for example, *tup* for the 'sardine' class of fish, discussed below. In the case of *teur*, there is a clear feeling that the fish forms a group with *teneb*, which looks similar and behaves similarly, but there is no explicit generic term covering both. In this case, the phrase *tenebira kaimeg* 'snapper's friend or companion (*kaimeg*)' is used. This concept of *kaimeg* is important in Meriam ethno classification, but has not so far been clearly delineated. It involves some notion of common class membership, but also (perhaps distinctly) of travelling together, perhaps of occupying a similar ecological niche.

The third element of the definition here is the specific physical characteristic, which in this case distinguishes *teur* from *teneb*: *bambam warwar* 'with yellow stripes'. In producing definitions in this part of the dictionary, the initial policy has been to allow a fair degree of freedom to the students to include the characteristics which appear to them, looking through the eyes of their culture, as the most salient, and not to impose a conceptual grid from the outside. Gradually, a picture of the type of factors involved in indigenous classification could be built up, and perhaps applied more consistently to dictionary construction. The following are the factors so far used by the students in Meriam Mir definitions of fish (McConvell 1983):

(a) Physical

- (1) size relative to (indigenous) 'genus'
- (2) having/not having a particular organ/texture
- (3) having a large/small particular organ
- (4) colour of fish
- (5) colour of particular organ/feature
- (6) beauty/ugliness of particular organ
- (7) looks 'like' another fish
- (8) type of meat/fat

b) Behaviour

- (1) general habitat (for example, coral reef)
- (2) specific habitat (for example, south west of Mer)
- (3) 'character' ('tricky', for instance)
- (4) *kaimeg* ('mate') of another fish
- (5) feeds on particular species

As well as these characteristics, very often mentioned is the mythological significance of different species. A number of common fish occur as characters in local myths. Reference may be made to the role they have in the story, the kinship relation with other fish in the story, and/or their relationship with geographical features of the Islands or reefs which they created or interacted with in some way, and which in some cases bear their name.

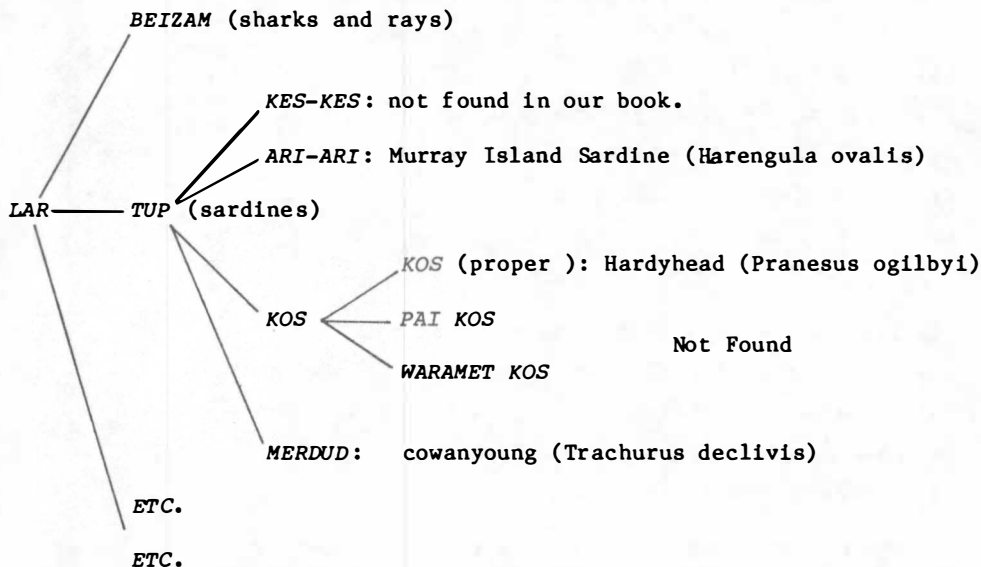
An example of this is the well-known story of *Nageg* ('Trigger-fish') and *Geigi* ('Trevally'). *Nageg* is *Geigi's* mother; the story also involves a number of other fish species and displays an implicit classification of fish according to depth of the water in which they are found, and preferred fishing technique (McConvell 1983).

## 10. SEMANTIC FIELDS AND ETHNOCLASSIFICATION

Definitions led us further into the study of semantic fields in detail, to discover further vocabulary, and to determine, if possible, the structure of the semantic field. Such investigation thus makes possible, in turn, a more systematic approach to writing definitions, using established indigenous taxonomies, and so on.

Students generally chose a field, and wrote out definitions of the different words in the field and related concepts. Thus, for instance, one student wrote out words for several types of coconut, together with definitions in Meriam Mir. These definitions yielded more words for parts of the coconut, developmental stages, which were discussed, and further defined. As well as assisting with the basic dictionary, such work could ultimately contribute to elements of an encyclopaedia of Meriam knowledge.

As fish were our special subject, this field was particularly examined. The students discovered hierarchical taxonomic structure in fish (*lar*), of which the following diagram shows one part:



Here, *lar* (roughly 'fish') is divided into several 'families' which have generic names, as well as 'families' which do not have generic names, and individual species which are not classified into 'families'. One 'family' is the class *tup*, usually translated locally as 'sardines'. Within this family there are two more tiers in the hierarchy. The tier immediately below consists of four species; *kes-kes*, *ari-ari*, *kos*, and *merdud*, all of which may optionally be qualified by the generic *tup*, for example, *kos tup*. One of these, *kos*, is further subdivided into three distinct species, one of which is the 'real' *kos* (thus, the name *kos* appears at two levels in the hierarchy), and the other two have distinguishing qualifiers *pai* and *waremet*. It seems that the word *kos* must obligatorily be used with these, however.

In some other cases there are two or three names for different stages in growth of one species ('small'; 'middle-sized'; 'over-sized'). Whether the concept of one 'species' here always corresponds to that in European scientific classification, is not yet clear.

## 11. VERBS

So far we have only talked about nouns. Since nouns are inflected by suffix, it is always clear what the stem form is and how it can be inserted alphabetically into the dictionary. With verbs, however, the matter is not so easy, since they have both prefixal and suffixal inflections, and it is not always immediately clear what the stem form is, particularly at the present stage, when morphological analysis has not been completed.

The form of the verb to be used as the dictionary entry has not been decided at the stage we are dealing with. It was felt that the form should be as close as possible to the stem form. There could be problems in using the stem form as derived by morphological analysis if this did not constitute an actual verb form, but only an abstract entity, since most of the users of the dictionary would not have any acquaintance with linguistics. Consistent use of a particular verb form, such as the infinitive, or the imperative, was to be preferred, since these appeared at first sight to have no prefixes. Later work seems to show, however, that this still does not overcome all problems in choosing a dictionary entry form for verbs.

Another question is: how predictable are the verb paradigms for any particular entry form? Obviously a preferred verb entry form would be one to which the least number of additional forms of the verb would have to be added in order to make the entire paradigm predictable from the dictionary entry. This presupposes a fairly full account of verb conjugation, which is not yet completed.

For example, there are many forms of the verb 'to go', with prefixes and suffixes. Some of these, in the future tense, are as follows:

ka	ia-ka	na-bakiamu-lu	'I will go'
ma	ia	bakiamu	'You will go'
e	ia	o-bakiamu	'He will go'
mi	ia-mi	na-bakiamu-lei	'We (two) will go'
wa	ia	bakiamu-lam	'You (two) will go'
wi	ia	o-bakiamu-lam	'They (two) will go'

Now it would not make sense to record all these forms in the dictionary, especially as they would occur in different alphabetical positions due to the prefixes. However, in the case of the verb forms above, it is easy to see that there is a stem *-bakiamu-* (set off by hyphens), with prefixes *na-* and *wa-*, and suffixes *-lu*, *-lei*, and *-lam*. Luckily, this stem form *bakiamu* is also the actual singular imperative form, so could reasonably be chosen as the dictionary form.

Unfortunately, however, this is not the whole story. In the future plural, a different stem, *bakiaw* appears for the verb 'to go', for example:

wi	ia	o-bakiaw-are	'They (more than 3) will go'
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As a result, this must either be entered in the dictionary too, or another regular explanation found for it, to appear in the grammar. Nor is the stem form for all verbs, as arrived at by segmentation analysis, always the same as the imperative form. A nominal form of the verb (the gerund) is probably preferred as the most convenient citation form by the students, but again, it does not always bear a regular relationship to the stem. How predictive it is of other verb forms is a matter for further investigation. All these considerations emphasized to the students the necessity for doing morphological analysis side-by-side with the dictionary work.

## 12. WORDS FROM TEXTS

The third important way of collecting words for the dictionary is to take them from texts in Meriam Mir. As there is not much literature in existence in Meriam Mir, many of the texts used were produced by the students themselves. They wrote the stories themselves, or transcribed tapes of stories they recorded from other people. The students hope to record more such stories from older people at Mer (Murray Island), transcribe them and discuss difficult words with the older people. In this way, they hope to collect more words for the dictionary, improve the quality of the definitions, and add to the examples used to illustrate the usage of the words.

Ron Day has this to say in conclusion:

"Now we have come to the end of our first session at S.A.L. and are ready to go home. When we get home, we would like to discuss with the elders of the community, and the community itself, the people, what we are doing in our studies. A most important part of our studies is the dictionary. Because there are some words that we are not sure of, when we are on holidays, we will collect as much information as we can from the old people to help us in the dictionary work."

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## A YOLNGU-MATHA DICTIONARY- PLANS AND PROPOSALS

R. David Zorc

### 1. INTRODUCTORY NOTES <sup>1</sup>

In May and June 1979, I had the opportunity to attend a lexicography workshop under the direction of Professor Ladislav Zgusta in Manila. There he stressed the differences among:

(i) lemma - basic information necessary to locate a word in the language, including grammatical information and irregularities in form or pronunciation, speech register, and so on;

(ii) main entry - semantic information and phrase or sentence examples; and

(iii) subsidiary information - cross-references and etymology.

The emphasis at all times was *basic* information; economy of style and presentation are crucial in an age of costly publication prices and users who want easy answers to their queries. Hence the lexicographer must ask himself two crucial questions:

(i) What information must I include? and

(ii) What information may I exclude?

for each entry! He stressed the difficulty of making dictionaries and referred to a classic quip: "It is no longer necessary to have prisons or capital punishment, all we need do is have our criminals make a dictionary - that will be punishment enough" (cf. Zgusta (1971:15)).

During 1983, I plan to begin work in earnest on a pan-Yolngu-Matha dictionary (other commitments have precluded beginning any earlier), and I anticipate the project to run through to 1985. Since this is a dictionary representing speech varieties across a language family, I foresee a large (but hopefully not insurmountable) number of problems, which I will address here in more general terms, following some questions posed by Peter Austin (see introduction).

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Peter Austin, ed. *Papers in Australian linguistics* No. 15:  
*Australian Aboriginal lexicography*, 31-40.  
*Pacific Linguistics*, A-66, 1983.  
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## 2. USES AND USERS

Someone might well ask: "Why make a Yolngu-Matha dictionary in the first place?". The idea arose because I have heard criticisms of existing dictionaries and wordlists, mainly from the Yolngu themselves: "That word isn't Gupapuyngu, it belongs to the Dhuwa moiety, and Gupapuyngu is Yirritja!". Similar comments have been made in response to stories by various Aboriginal authors. The fact is that any speaker may use any word from some 55 Yolngu-Matha speech varieties, depending on family background and upbringing, current death taboos, or even 'style'. Hence, I have begun typing data cards with language, dialect, or moiety information, based on the provenance suggested, and on cross-checking against many language assistants. Yolngu-Matha speakers may be among the world's leading 'purists', for when they see a book or wordlist labelled 'Gupapuyngu', they expect to find words that are genuinely only Gupapuyngu, even if Gupapuyngu speakers have borrowed forms from other Yolngu-Matha dialects. They do not carry this purism into Makassarese or English loanwords, but are concerned over the 'ownership' of the Yolngu-Matha lexicon. Hence, the Yolngu-Matha dictionary will label each form on the basis of a number of cross-cutting native principles (moiety, broad speech group, and clan group; see 4 (ii) below).

Realistically, a Yolngu-Matha dictionary is more likely to have a limited demand than to become a 'best seller'. Nevertheless, I do not plan to address an audience of linguists (who should be able to deal with virtually any format), but rather the interested layman, including workers and teachers in Aboriginal communities who would like to learn something of the language, and the literate Northeast Arnhemlander. The last group are literacy workers, council members, and primary school teachers who need to write down and insure accuracy of spelling in their language, and who require further information on English spelling, meaning, and usage. This choice of audience already imposes the need for a good deal of information, including phonological/phonetic, grammatical, semantic, sociolinguistic and cultural, and puts a strain on the principle of economy. The Balanda (European) will need to get a good deal of information from the Introduction, where the phonetics and grammar will be summarized, before he or she can use the dictionary efficiently. The Yolngu will be seeking probable English<sup>2</sup> counterparts to words in his or her language, including labels as to the rudeness, politeness, or eruditeness of English levels and the collapsing of grammatical differences he or she may well be used to. For example, *guḷa* is a noun meaning 'faeces, excreta' (erudite), 'stool, bowel movement' (polite), 'shit' (rude), while *biḷk-thun* is a verb meaning 'defecate' (erudite), 'move bowels' (polite), 'shit' (rude), 'pooh' (baby-talk). The Yolngu often use only the rude forms, because they are unaware of the alternatives, while the European attempts to make a verb of *guḷa* or a noun of *biḷk-thun*, and hence must remember the grammatical information as to the uses of a noun and all its suffixes as opposed to a verb of Group 1 and all of its tense/aspect forms and derivations.



## 3. THE CORPUS

The data will be drawn from stories and wordlists produced by students of the School of Australian Linguistics (S.A.L.), as well as the works of several other scholars, including Lowe 1976 and Christie 1979 on Gupapuyngu, Davis (in press) on Gupapuyngu flora and fauna, Morphy 1983 on Djapu, Schebeck (n.d.) on Rirratjingu, Wood 1978 on Gälpu, Heath 1980 on Ritharrngu, Wilkinson 1981 on Djambarrpuyngu and Ross and Walker (in press) on Gumatj. A computer and secretarial assistance would be invaluable, but, unfortunately, I will have access to neither, at least to the scale required. At present, I plan to include all words gathered, including those known to be under taboo, but such forms will be marked with a prefixed dagger, for example, *†guya* 'fish' [cf: *ngarirri*]. I am open to suggestion on this issue, but language assistants have agreed with this procedure and use it themselves, since one is allowed to write, but not say, tabooed names or words. However, sacred and/or secret ceremonial terms will not be included (at the request of Yolngu assistants) because the dictionary is likely to be seen by women and children.

## 4. THE LEMMA

The following information is considered critical:

(1) The Yolngu-Matha word (or morph, in the case of productive suffixes) in the established orthography. Alphabetical order will also follow current conventions: *a, ä, b, d, ḡ, dh, dj, e, g, i, k, l, ṽ, m, n, ṇ, nh, ny, ng, o, p, r, rr, t, ṭ, th, tj, u, w, y*<sup>3</sup>. Glottal stop ' is ignored, but forms with it follow those without, for example, *bala* 'away' precedes *bala* 'house' and *ḡjawar-yun* 'be tired' precedes *ḡjawar'-yun* 'pierce, spear, inject'. Digraphs are treated as if they were single letters, and follow the completion of a non-digraph. Thus, all *ḡ-* forms occur before *dh-*, all *dh-* forms before *dj-*, and so on. Any departure from this approach reaps unpleasant consequences. A Gupapuyngu Dictionary prepared by Michael Christie ran into heavy criticism because he decided to ignore all digraphs and followed English alphabetical order strictly, with, for example, *dj-* forms after *di-/ḡi-* entries. In a letter to Yolngu-Matha linguists dated 20th March 1982, I suggested I might disregard differences in vowel length and collapse entries of *ä-a*, *e-i*, and *o-u*, and received several strong (and one vituperative) reactions against this proposal. Yolngu-Matha orthography and alphabetical order has become a sacred cow. If a clear phonetic statement is included in the introduction, I do not see the need for phonetic information in the lemma (such as Schebeck has included in his examples (see page 53)), although there are a few cases of exceptions that would need exemplification, for example, the clan name *marika*, with accent on the penult rather than the first syllable and the interrogative particle *muka*, with accent on the ultima, and so on. Besides the mass total of ink and space saved, the dangers of indicating a given pronunciation may be interpreted as prescriptive where many dialectal or even idiolectal alternates exist: *gumatj* = [ *gumat̪* ] or [ *gumat̪* ]. This is particularly the case in a pan-Yolngu-Matha dictionary, but may be less so in a strictly Dhangu'mi (Rirratjingu) dictionary.

I might add that I strongly oppose semantic orderings, because of the difficulty of information retrieval or location. In wordlists, this procedure is warranted, particularly if an alphabetised appendix is included, but in a dictionary many semantic groupings are blurred or downright arguable.

(ii) Coded information as to the dialect or provenance of a form. The Yolngu have three cross-cutting guidelines:

- (a) Moiety = *Dhuwa* or *yirritja*, or both, that is, in use by any/all speakers;
- (b) Language type = *dhuwala'mirri*, *dhuwal'mirr*, *dhay'yimirr*, *dhangu'mi*, *djangu'mi* (based on the proximate deictic for 'this');
- (c) Dialect = *Gupapuyngu*, *Gumatj*, *Dhalwangu*, *Djapu*, *Marrangu*, *Marrakulu*, *Liyagawumirr*, *Djambarrpuyngu*, *Rirratjingu*, *Gälpu*, *Ngaymil*, *Wangurri*, *Warramiri* (based on membership in one or more clans, for example, *Gupapuyngu* includes *Gaykamangu*, *Gumbula*, and *Marrkula* clans);

To these may be added two linguistically-derived criteria:

- (d) Subgroup = Northern Yolngu (including *Dhangu'mi* and *Djangu'mi*) which have *nhän* 'he/she'; or Southern Yolngu (including *Dhuwala'mirr*, *Dhuwal'mirr*, *Dhay'yimirr*, *Ritharrngu*) which have *ngayi* 'he/she';
- (e) Vowel dropping (including *Dhuwal'mirr*, *Dhay'yimirr*, *Dhangu'mi*, *Djangu'mi*);

Thus, for the five synonyms for 'big', there are: *ngutu* (may be used by any moiety or social group), *bathala* (*Yirritja*), *yindi* (*Dhuwa*), *gumurr* (vowel-dropping) and *gumurru* (*Yirritja*, non vowel-dropping); for the intensive marker 'very much so', there are: *wirrki* (*Gumatj*, *Djapu*), *marimi* (*Dhangu/Djangu'mi*), *mirithirr* (*Dhuwal'mirr*, *Dhay'yimirr*) and *mirithirri* (*Dhuwala'mirri*). Ultimately, abbreviations will be developed for all of these categories.

This sort of information may not be available for every form in the dictionary, but will be sought. Where such information cannot be specified accurately, it will best be left out, signifying 'don't know', rather than pan-Yolngu-Matha.

(iii) Coded information as to the grammatical function of a form, including the following categories:

- (a) pronouns (personal) and demonstrative pronouns (deictics);
- (b) noun, those taking root case suffixes, such as *-dhu* (ergative), *-lili* or *-li* (allative), *-nguru* (ablative), *-kurru* (progressive), *-ngura* or *-nga* (locative);
- (c) name, those roots taking suffixes such as *-nha* or *-ny* (accusative), *-wala* or *-wu* (locative/allative), *-gung(u)* (originative);
- (d) locational, taking only a limited number of case suffixes;
- (e) verb, specified as transitive or intransitive, and with an indication of group membership. The following is my provisional classification of March 1982, with revisions based on feedback from several linguists working on Yolngu-Matha:<sup>4</sup>

Group 1 [-un, -urru, -urruna, -una(ra)] (most productive group)

Group 2 [-ma, -ngu, -ngala, -nha(ra)] (causative, factitive, production)

Group 2a [-kama, -kungu, -kangala, -kanha(ra)] (6 forms noted)

Group 2b [buma, bungu, bumara, bunha(ra)] 'hit'

Group 2c [ngäma, ngäku, ngäkula, ngänha(ra)] 'hear'

Group 2d [-thama, -thulu, -thangala, -thanha(ra)] (2 forms noted)

Group 3 [-mirri, -mirri, -mina, -minya] (Reflexive, Reciprocal)

Group 3a [-i+rri, -∅, -na, -nya(ra)] (includes -thi+rri inchoative)

Group 3b [-i, +∅, -na, -nya(ra)] (7 forms noted)

Group 4 [-a, -i, -na, -nha(ra)] (historically old stems, 16 forms noted)

Group 5 [-an/-aṇ, -ulu, -ara, -ana] (largish group, depending on dialect)

Group 5a [-an/-aṇ, -urru, -ara, -ana] (dialect variants of Group 5)

Group 5b [-tjan, -yaku, -tjarra, -tjana] (3 forms noted)

Group 5c [-tjan, -tjurru, -tjarra, -tjana] (1 form noted)

Group 6 [-∅, -∅, -∅, -∅] (loanwords that do not change inflection)

- (f) preverb particle, indicating tense or mood, for example, *dhu*, *yurru*, *ngarru*, signalling future, *ga*, *yukurra*, *yaka*, progressive, and *nguli*, *baying*, habitual;
- (g) verb replacement particle, substituting for verbs in discourse, for example, *rur* 'stand' (= *dhärra*), *mit* 'cut' (= *gulk-thun*) and *gulk* 'run' (= *wandi*);
- (h) adjectival, semantically justifiable as a separate class in that they have true antonyms and grammatically may occur with uninflected intensives (*wirrkī*, *marimi*, *mirithirri*);
- (i) discourse particles, inserting mood or giving subtle shifts to statements, for example: *muka*, *ngatja*, interrogative tag; *-nha*, *-na*, sequence, and *wäy*, optative, plea;

- (j) conjunctions, including *ga* 'and', *bala* 'then', *wo* 'or', *märr* 'so that', *bili* 'so', *maku* 'or' (with words), *nganydja* 'or' (with clauses) and *balangu* 'when, if';
- (k) interrogatives, that is, *nhä* 'what?' (corresponding to nouns), *yol*, *wara* 'who?' (corresponding to names), *wanha*, *ngala* 'which?, where?' (corresponding to locationals), *nhawuy*, *nhawi* 'what-you-may-call-it?' and *nhaltjan* 'do what?';
- (l) temporals, *yalala*, *yalnguwa* 'later on', *ngäthili* 'earlier', *yawungu*, *barpuru* 'yesterday', *gäthura* 'today', and so on;
- (m) quantifiers, such as: *wanggany* 'one', *bulal*, *märrma* 'two', *bukmak*, *warrpam* 'all';
- (n) interjections, such as *way* 'hey', *yakay* 'ouch', *go* 'come on', and so on.

Some linguists may find more classes than necessary represented here, and I am open to collapsing them, although I am trying to keep the non-linguist in mind (in terms of semantic and grammatical behaviour of the Yolngu-Matha forms). Such information needs to be abbreviated, but should not be excluded. For example, it is useful and important to know that *gungda* 'stone' is both noun (*gungdalili* 'towards the rocks') and name (*gungdawala* 'to/with Jessie M. Gaykamangu'). Similarly, one must know if a verb is transitive or intransitive and some of its basic grammatical requirements in order to use it correctly, for example, *wanga* (v-intr-4) 'talk, speak to (-gu); talk, speak about (-galangawuy); speak (a language) (-kurru).'

## 5. THE MAIN ENTRY

Semantic information should be clear and succinct. Phrase or sentence examples should be provided if they help specify the meaning. Zgusta warned against long detailed lists of possible meanings, for example, *manymak* = 'good, nice, fine, well, delicious, healthy, beautiful, pretty, neat'.

The language level should be aimed at the most general audience, for example, *manymak ngatha* 'delicious food' (rather than: 'tasty tucker'). When examples are included, one must consider if they might better belong under a different entry, for example, *manymak miyalk* 'good wife', probably is better suited for *miyalk* 'woman' than for *manymak* 'good'.

A general guide to extensions of meaning or polysemy is required within the main entry; sub-numerals are not necessary if the entry can be kept short, so that semicolons divide each major diversity, for example, *walu* 'sun; day; time(-piece)'. The last element indicates that 'time' and 'time-piece' are both appropriate meanings. Another example is *gurtha* 'fire(wood); matches, lighter'. Homonyms, on the other hand, should require either separate entries or separate numbers within an entry, for example, *bul*-yun (1) 'play'; (2) 'swell-up'.

Yolngu-Matha is exceptionally rich in idioms, and these will be treated within the main entry, although presentation may be a problem. *ngoy* 'seat of emotion, one's inner self; guts' has over seventy idioms that could take up two full pages if indented at the start of each new sub-entry; some other body parts, for example, *buku* 'forehead', *gong* 'hand, arm, finger', have nearly as many. Elegance would appear to conflict with economy, and I am not sure which avenue to follow at present. Possibly the use of ... would allow a flow between each idiom and save space as well.

A dictionary need not (and probably should not) be an encyclopedia, but certain basic cultural information should be included, including the scientific names of flora and fauna, where possible: *muta-muta* 'red berry; eaten when ripe; juice used for treating ringworm'; *Grewia retusifolia*.

Tribal wisdom should also be tapped (and preserved) by showing the interconnection between flora, fauna, and natural events ("when this tree bears flowers, we know that the parrot fish are abundant", "when these yams are ripe, we know the wet is close at hand", and so on), or with people and clans ("this shark is the totem of Clan X", "this tree is the totem for the *bulany*' subsection").

## 6. SUBSIDIARY INFORMATION

After the main entry, but not necessarily indented separately, will come some, but not generally all, of the following information:

(i) synonyms, for example, *manymak* 'good' [Syn: *ngamakurr(u)*, *ngamakuli*, *laytju*]; *liya* 'head' [Syn: *dāmbu*, *mulkurr*, *gayawak*, *wagangga*].

(ii) antonyms, for example, *dhunupa* 'correct; straight; right-hand/side' [Opp: *djarrpi* 'crooked', *wipku* 'left'], *moguk*; 'salty (water)' [Opp: *raypiny*].

(iii) cross-references, for instance, *miny'tji* 'colour' [cf: *gurrngan*, *mol* 'black', *miku* 'red', *milkuminy*, *mulkuminy* 'blue/green', *watharr* 'white']

(iv) internal comparisons to less transparently related forms, for example, *mel* 'eye' [cf: *milkuma* 'show', *milma* 'within sight', *milkarri* 'tears', *milparrambarr* 'eyelashes']; *wanggany* 'one' [cf: *wanggayngu* 'other, different']; *baṭami* 'woman' [cf: *waṭangu* 'proper; ownership of']; *nhina* 'sit; stay' [cf: *dhut* (verb replative)]; *bur* (verb replative) 'arrive' [cf: *buna*]. For Yolngu-Matha, this would also include noun-verb pairs, for example, *gara* 'spear' [cf: *dharpuma* 'to spear']; *waltjan* 'rain' [cf: *dhar-yun* 'to rain']; and non-productive derivations, *marrnggitj* 'medicine-man, sorcerer' [cf: *marnggi* 'to know'].

(v) etymological information, if available, for example *bathala* 'big' [Makassarese *battala*? 'heavy, burdensome'], *bathi* 'dillybag, container' [Makassarese *patti* 'box, case, chest; coffin', cf: Malay *p ti* 'box, chest, case'], *mel* 'eye' [Proto-Pama-Nyungan \**mi:l* 'eye', cf: Warlpiri *mil+pa*].

Zgusta felt very strongly in favour of putting an etymology at the *end* of an entry (rather than after the lemma, as is done with some English dictionaries). "Is it an etymology or a warning?", he would ask. This has a further advantage here in Australia, where so few forms can be related to reconstructions - they are not glaring when they are absent. Although historical linguistics is still in its infancy here, compared to Indo-European or Austronesian, enough information is available to warrant at least some etymological information of a reliable nature. For example, Walker and Zorc's 1981 study of Makassarese and Austronesian loans in Yolngu-Matha has applications for most languages of northern Arnhemland (Burrarra, Anindilyakwa, Nunggubuyu, Djinang) and could shed at least some light on the provenance of non-Australian forms. Similarly, fully assimilated English loans should be marked, as could the more definite reconstructions of Proto-Pama-Nyungan, lower-order subgroups such as Proto-Yolngu, or possibly even a Proto-Australian (?). However, the recommendation should be considered that it is better to leave out a risky etymology than produce a blatant error.

## 7. POSTSCRIPT

I have had access to drafts of the papers in this volume by Austin, McKay, and Schebeck and find myself generally in agreement with what they say. I am encouraged to see solutions to my problems emerging from their work and recommendations. I would be happy to correspond with any scholars on points of mutual interest, and receive comments as to the directions I am taking (including the wrong turns and possible detours).

## FOOTNOTES

<sup>1</sup> I wish to recommend Zorc 1979 as summarising a number of my thoughts on the requirements and desiderata of various types of dictionary (basic, bilingual, and etymological). Offprints are available on request, so I will not repeat or dwell upon points already dealt with in that paper.

<sup>2</sup> Although the Yolngu-Matha/English dictionary will have as one of its goals a pedagogical guide for Yolngu-Matha speakers to English usage, no English to Yolngu-Matha dictionary is planned, and would indeed be a difficult venture. *One* would be needed for *each* specific Yolngu-Matha communict, but there would be no advantage to having a long list of forms translating English glosses without duplicating the sociolinguistic information to be contained in the Yolngu-Matha sections. Should computer facilities become available to the School of Australian Linguistics, such separate English to Yolngu-Matha communict lexicons could be produced by a series of programmed commands, for example, make a list of all Gumatj, Dhuwala'mirri, and Southern Yolngu forms for an English - Gumatj lexicon, or make a list of all Djapu, Dhuwal'mirr and vowel-dropping Southern Yolngu forms for an English - Djapu lexicon, and so forth.

<sup>3</sup> In the Yolngu orthography *ä* represents long [a:], *e* represents long [i:] and *o* represents long [u:]. Underlining signifies retroflexion (apico-domal articulation), and digraphs with *h* as the second element are lamino-dental sounds. Throughout this paper the standard Yolngu symbol *ŋ* is spelled *ng* for typographic convenience.

<sup>4</sup> Copies of my paper detailing this classification (Zorc 1982b) are available on request. The four suffixes set out on each line in the following listing (except for Groups 2b and 2c, which have only one verb each) are: citation form or 'simple present', 'future' (definite or tomorrow future, positive or negative imperative), 'past' (non-specific or recent past), and 'remote past, negative of specific past' (also used in derivations for causative, reciprocal, infinitive, adjectival or anti-passive forms). The symbol + indicates a more hypothetical (less transparent) morpheme boundary than those marked with -. Elements after + are dropped in subsequent inflections. Thus, in Group 3a, +*rrri* disappears in the remaining tense/aspect inflections, for example 'to desire' is *djal-thi+rrri*, *djal-thi-Ø*, *djal-thi-na*, *djal-thi-nya(ra)*. An example from Group 3b would be 'to go' *marrtj-i*, *marrtj-i*, *marrtji-na*, *marrtji-nya(ra)*, and from Group 4 'to speak' *wang-a*, *wang-i*, *wanga-na*, *wanga-nha(ra)*.

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## DICTIONARIES FOR AUSTRALIAN LANGUAGES: SOME GENERAL REMARKS

Bernhard Schebeck

### 1. INTRODUCTION

In response to the questions raised by Peter Austin (see introduction), I have formulated a number of remarks and comments on the topic of dictionary production for Australian Aboriginal languages. These are based upon my years of experience working in Australia, particularly with the Yolngu languages of north-eastern Arnhemland.

I divide my comments into two types: those dealing with general issues on one hand, and those dealing with specific topics on the other. In section 5 below, I include sample entries from my Dhangu dictionary with explanatory notes on format and organization.

### 2. GENERAL ISSUES

#### 2.1 Format

I shall maintain the traditional divisions between 'dictionaries' (bilingual), 'etymological dictionaries' (diachronic) and 'lexica' (monolingual). My comments concern dictionaries only and hence relate to bilingual lexicography.

The thesaurus arrangement, while attractive to the comparativist, remains a specialized type of dictionary. Moreover, it introduces the additional problem of linguists having to agree on a semantic grid for the classification. In any case, the benefits of a thesaurus may be obtained by the specialist in other ways (see 2 below).

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*Pacific Linguistics*, A-66, 1983.  
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I cannot see why an Australian dictionary should have any particular difficulty in following the style of European or non-European (Arabic, Indonesian, and so on) dictionaries; the Australian scene is fortunately spared the orthographic complications facing lexicalists in some Asian languages. The main problem area, however, undoubtedly concerns the alphabetical order to be adopted, especially as this, as far as possible, should be standardized across Australia. Some of my suggestions on this point are as follows:

(i) since linguists are specialists in dictionary usage, the needs of users other than linguists should take priority in considerations of determining an order. A linguist should be able to adapt to any order. I suggest relying upon the English alphabet whenever possible. For the linguist, some irritating inconsistencies may ensue; for example, retroflexes might appear as *rd* in one area, as *d* in another, and so on. The order of arrangement is thus closely linked with the question of a uniform alphabet.

(ii) in languages where an official orthography has established itself, this orthography should be used. If a case arises where two or more orthographies compete, problems have to be sorted out by the specialists in the area before any dictionary is produced. The dictionary should be as authoritative as possible. For languages where no official orthography exists, the same reasoning applies: phonological representations should provide the basis for a future orthography, to be used henceforth. It is therefore imperative that linguists in an area agree on the alphabet to be adopted, before a dictionary goes into print. In any case, it is advisable for specialists to collaborate in the production of a given dictionary; the 'odd man out' may have to be pressured into conformity by the majority of the cooperating group. In languages with an official orthography, not much can be done any more in terms of uniformity throughout Australia; but, at least for phonological transcriptions in languages without an official orthography, Australia-wide uniformity should be aimed at. It has to be seen if some general trends in most official orthographies have so far emerged; if so, phonological alphabets should endeavour to make the corresponding adjustment(s), even if this means some esthetical deviation from more commonly held practices, for example, concerning the use of digraphs.

(iii) if diacritics are used, I would suggest as a general principle that a simple letter immediately precede the one with a diacritic. For example, if *ḍ* and *dʲ* are used, the alphabetic order should be *d* - *ḍ* - *dʲ* (rather than, say, *d* - *dʲ* - *ḍ*, because of the often-used digraphs *dh* and *dj*).

(iv) established orthographies may generate peculiar problems which could have been avoided if another alphabet had been chosen. An example is the Yolngu orthography which represents the three long vowels by *e* (that is phonemic /i:/), *o* (phonemic /u:/) and *ä* (phonemic /a:/) respectively. By the criteria proposed here, the alphabetic order of the vowels would be: *a* - *ä* - *e* - *i* - *o* - *u*, resulting in an inconsistency in the ordering of short and long vowels. This, admittedly, will be felt as a little awkward by some dictionary users; discussion needs to provide an answer to the question of whether such a special case warrants the breaking of some general principle for the sake of consistency. Zorc recently proposed to disregard vowel length altogether in alphabetical ordering - a principle already followed by Heath 1981 in his Ritharrngu glossary - however, he has now retreated from that position (see Zorc (1983:33)).

(v) finally, some languages might need special symbols which do not appear in the English alphabet (such as  $\beta$  or  $\ddot{o}$ ). Again, regional discussions should precede more general ones.

If an English-Australian dictionary is to be produced at all then it should be a full dictionary, not a simple finder list, I believe. However, it may be useful to have for each of the two types of dictionaries (that is, Australian-English and English-Australian) a reverse finder list at the end. The choice of producing one (Aboriginal-English) dictionary or two (also including English-Aboriginal) will doubtlessly depend on the needs of the users.

## 2.2 Users and uses

Reformulating this question, one may ask: "Who is likely to want to use a dictionary?". It would appear that the answer is simple: educated (as against simply literate) people. Without wishing to prejudge future sociocultural developments in Australian Aboriginal communities, it appears to me unlikely that, for example, an Aboriginal station hand or grader driver would have much more use for an Australian language dictionary than, say a European farmer or panel beater (other than the occasional scrabble or crossword addict, who needs a lexicon rather than a dictionary, anyway) has for a dictionary of his language. This belief underlies my conservative thinking on dictionary-making in Australia. It cannot be denied that the existence of Australian language dictionaries increasingly will represent an asset in terms of ethnic pride, but such considerations are likely to affect practical questions of dictionary-making only minimally. Specialised uses may occur, for example, in schools. Normally, a fully-fledged dictionary undoubtedly would not be required, but some shorter 'glossary' would suffice; this falls in the class of special teaching aids (also introducing students to the use of large and more complex full dictionaries).

Several participants at the workshop emphasized the point that they give priority to considerations linked with their activities as trainers of Aboriginal teachers, especially in respect of the bilingual education programs. As I do not fall into this teaching category, my formulation of the principles has a more academic colouring. Nevertheless, I do not believe that our viewpoints are irreconcilable. However, I simply cannot believe that we can look forward to a whole society of (for instance, Yolngu) teachers and literati keen on looking up dictionaries all day long (as linguists may do at times). In view of the small size of the societies we are dealing with here, these will cater, in the first place, to a handful of people. This, of course, is no reason for complacency or neglect, especially if one thinks in terms of future generations. Hence, certainly, I do endorse the principle of keeping dictionaries accessible to whoever might wish to use them. Yet, on the other hand, I do not think my opinions are invalidated by the current educational effort.

### 3. SPECIFIC ISSUES

#### 3.1 Depth and breadth of coverage

Of overall importance here is the sociolinguistic link with decisions about which users one wishes to address. It may well be suggested that secret/sacred material be dealt with separately in something resembling our technical dictionaries. (As Zorc (this volume) points out, his students specifically requested that such information be left out of a general Yolngu dictionary.) It may be contemplated that such dictionaries should have a restricted distribution and access, for example, available only to university departments, and so on. If some cross-references to this sphere should appear at all in the general dictionary, they may be limited to the technical specifications at the end of each entry (for which see below, 3.3). I remain undecided on 'rude words'; if they are not to be included in a general dictionary, treatment in special publications would be advisable, perhaps again with some technical reference (see also 3.3).

I fall back again on the traditional European idea of separating the two notions of dictionary and encyclopaedia; therefore, a dictionary is not an encyclopaedia. However, maximal information should be packed into minimal space (see also 5. below). In cases where adequate glosses are difficult to find, and in cases where further explanation appears necessary, comprehensive references to relevant articles and/or sections of books may be included. In special cases, a native definition of some complex concept could be given after the English gloss.

In many areas of Australia today, certain dialects of a group of dialects are emerging as 'official' *lingua franca*. This may appear regrettable to some, especially to those who have missed out. However, the most practical approach would be to take advantage of this situation and to give prominence to such a leading dialect. Dialect differences, however, should be indicated somehow; if separate dialect dictionaries are not warranted, reference must be made to dialect variation in the dictionary. In other cases it may be advisable to add dialect supplements to the main dictionary, where only the dialectally different items are listed (with cross-references to the corresponding items in the main body of the dictionary); in such a case, there also should be cross-references in the main dictionary itself.

In view of the likelihood of limited use (mostly by a handful of comparative linguists, I suppose), I cannot foresee a great need in the near future for dictionaries translating from one Aboriginal language into another (such as, an Arabana-Aranda dictionary), just as I do not feel that there is a great urgency for producing (monolingual) lexica - interesting as such an undertaking would prove to be to the linguist.

#### 3.2 Form of entries

The following comments pertain to the actual form of the dictionary entries themselves. For my treatment of Dhangu, see 5 below.

### 3.2.1 Phonological information

Every entry should be provided with a phonetic transcription after the orthographical notation - with as many variants as appear necessary (that is, only major variations, but not those minor and regular ones which are dealt with in the phonological and phonetic description). Contrary to what was said about the orthographies above, phonetic representation should be uniform throughout Australia; IPA is an obvious candidate for this, but not absolutely necessary, if any other representation can be agreed upon.

Zorc (this volume) has expressed the fear that the inclusion of phonetic detail may be easily interpreted as prescriptive. My reply to this is simple: it is really a matter of attitude. If you are prescriptive, you can *never* make a mistake; if you are descriptive, or, perhaps better, non-prescriptive, you will always risk making errors and, in fact, are likely to make many. However, Zorc argues that the 'authoritative' character of a dictionary makes it vulnerable to *interpretation* in a prescriptive manner by its users, no matter what the author(s) had in mind. I would point out that European dictionaries have become prescriptive because they have been edited, revised and promoted by some native language authority - be it a formally established one (such as the notorious Académie Française in France) or not. Clearly, at this stage, there is no equivalent in Aboriginal Australia, although active involvement of native speakers is becoming increasingly important. Therefore, I cannot foresee in the near future a situation where white academics put together a dictionary (with the help of native speakers) which then would significantly influence native communities such that they would judge their own usage as 'incorrect' in terms of 'correct' prescriptions in the dictionary. Such an assumption is absurd and utterly paternalistic. I believe we linguists simply do not, and will not, have this authority. Thus, if we aim at being as authoritative as possible, then, necessarily, we must adopt a *descriptive* approach. Perhaps we may induce (unintentionally, one would hope!) some prescriptive notions in the minds of white users, in view of the role of dictionaries in European society; however, if those users do not seek advice from native speakers, they will be acting at their own risk. If they cannot refer to native speakers they must always keep in mind the descriptive character of the linguist's authority. On the other hand, if at some future date a dictionary were to exert some influence on an emerging native linguistic authority, we should *not* consider this any concern of ours, but accept it as a simple fact of history. To not do so would be to fall into the prescriptive trap in another form.

Perhaps it is correct that we should not give a phonetic transcription for each entry for reasons of cost and saving of space, ink and time. Certainly, it should *not* be for reasons of prescriptiveness; as linguists we are acquainted with notions such as dialectal and free variation. These must always be taken into account in a phonetic description. This is not to say that dialect differences are not describable by regular (phonetic) rules; such a mistaken interpretation of Zorc's warning recalls the popular notion that dialects (such as 'Aboriginal dialects') have no clear rules, in contradistinction to the great literary languages.

Phonologically distinct variants may be handled as separate entries, with cross-referencing to what is considered (or treated) as the main variant (in terms of phonology, dialectology or otherwise).

### 3.2.2 Morphological information

It would be best if Australia-wide agreement can be reached as regards the indication of roots. Otherwise (as I suspect will be the case), the entry may be given under a generally (that is, probably regionally) agreed form, in the manner in which, for example, European dictionaries have agreed on the infinitive for verbs. Still, in special cases, particular agreements will have to be reached; for example, prefixing languages may omit all prefixes for the entry, if so decided (it would be advisable that for this case, an agreement should be reached for all prefixing languages if possible). Productive derivations - which need not be given - that have semantic irregularities are covered by the item 'special uses' below. Where one draws the line between productive and non-productive forms is certainly a moot point, and I do not have any general ideas on this. My guess is that, again, regional agreements might provide the answer.

When listing of derived forms is needed and the alphabetical order is thereby interrupted, cross-referencing is the obvious means to remedy the situation. Reduplications and compounds should generally be dealt with only once, but might also need a separate mention in the correct alphabetical order, where only cross-referencing might be needed.

### 3.2.3 Syntactic information

Categorizing and sub-categorizing should be as detailed and precise as possible, in order to ensure maximum use (mainly by the specialist). Simple categorizing such as 'noun', 'transitive verb', and so on, should follow the entry immediately, while further sub-categorization - of interest mainly to the linguist - may be given in a final paragraph. This is dealt with later (see 3.3 below). Syntactic compounds and collocations should be dealt with by cross-referencing if necessary; the main entry will occur where the underlying head word of a collocation is listed.

### 3.2.4 Semantic information

For the sake of brevity, I would advocate the translation of each entry into simple English glosses, rather than elaborate semantic analysis (which again would threaten to disrupt Australia-wide uniformity, but see 3.3 below). I would strongly recommend making reference to specialised articles and/or passages in books for finer semantic information, if available (lexicographers often produce special articles in the course of their dictionary work). A simple system of sense-relations should be agreed upon Australia-wide, so that such relationships may be treated as simple cross-references, if necessary. The line between metaphor and alternative usage may prove to be fine and perhaps blurred, and has to be handled with care; I do not have any ideas about general guidelines here. I am not sure that poetic usage is well enough understood in most cases to warrant systematic inclusion; in clear cases inclusion might be recommended. However, in view of what I suspect is a general lack of insight into Aboriginal poetry, no overall principles should be adopted; it is better to have only a few, reasonably secure references, than many undigested and doubtful ones. When the time is ripe, special poetical dictionaries might be needed, in any case.

Scientific classification of plants and animals should be included (in brackets and in italics). Over the years I have heard several complaints voiced by non-linguists about the lack of acknowledgement by linguists when they include this type of information in their dictionaries. This applies particularly when identification of some natural species is involved. Of course, lack of acknowledgement is a matter of ethics, but it can also be outright misleading and detrimental to further research. For want of the necessary training, linguists are often obliged to work by approximation, with the help of such aids as picture books. Not surprisingly, zoologists and botanists are reluctant to accept such identifications at face value. Yet, often linguists leave them in the dark about whether identification has been made in this way, or through consultation with a specialist. It is imperative that the various types of identifications be clearly distinguished in the dictionary. The foreword should quote *in extenso* the sources used, either by reference to a specialist's (published or unpublished) work or by naming the specialist colleague(s) who assisted the compiler. David Nash pointed out at the workshop that specialists also like to know where specimens are held that have been used in establishing identifications, in case later rechecking is required. I feel that reference to the identifying specialist(s) should remove the linguist's responsibility for any specimens; however, I support the view that linguists should contribute to the general effort of collecting specimens, even if previously identified by a specialist, because of the continued need for such cross-checking.

Ethnosemantic classification should be given only if it is sufficiently clear as to allow for a brief indication (but see 3.3 below). In many instances, references to articles, books and so on may prove to be preferable.

At this point, I will take up an issue of classification mentioned by Zorc (this volume). Zorc has proposed that Yolngu words in the dictionary be identified, where possible, in one or more of the following terms: (a) moiety, (b) language type, (c) dialect, (d) subgroup, (e) vowel-dropping. I disagree with this cumbersome proposal because (c) includes all the others. In Schebeck 1968, to which Zorc explicitly refers, I reported on what I called 'three native theories'. I have never taken 'theory (a)' (moiety) seriously as a linguistic classification, and I still do not. Perhaps it would be valuable to study the actual way these native theories are used in practice and interfere with each other in daily life. But, to my mind, 'theory (a)' has no place whatsoever in a dictionary. While 'theory (c)' is the most detailed native classification, only 'theory (b)' may be considered a proper linguistic theory which does not explicitly refer to the supposedly perfect parallelism between social organization and linguistic divisions. I have provisionally endorsed 'theory (b)' while remaining hesitant about 'theory (c)' in detail because of the lack of conclusive linguistic verification. (Zorc's categories (d) and (e) are not native, but linguists' theories; the present decision about 'theory (b)' means that (b) and (d) are very similar, while the present list of 'dialects' simply reproduces 'theory (c)'). In my earlier paper, I also pointed out that Yolngu prescriptiveness corresponds to *claims*, that is, to issues which are ultimately political and not linguistic (as Zorc points out, they are formulated in terms of supposed ownership of words, not in terms of usage!). This of course is where Zorc's principles are on particularly slippery ground: as a teacher-trainer he is unlikely to gather most of his material from the 'authoritative' elders in the community. Hence, conflicting evidence would emerge sooner or later. In fact, even the elders disagree in the matter of 'real' ownership of many words. It has happened to me that the



same word is claimed by leaders speaking dialects belonging to as many as three different dialect groups (this, by the way, may be of interest to the historian!). Working with (I suppose mainly young) teacher-trainees hardly gives hope for more clarity. While morphology and a small part of the vocabulary may fairly clearly be assigned to some given dialect(-group), the majority of entries in the dictionary will be afflicted with such uncertainty. Hence, the crucial distinction should be made between the (probably partly conflicting) *linguist(s)'s* claims (*descriptive*, I repeat) and the (most likely also conflicting) '*ethnolinguistic*' claim(s) (partly *descriptive*, partly *prescriptive*). This was really the major point which I meant to make in the abovementioned paper. The '*ethnolinguistic*' claims are probably best relegated to my CR column (see 3.3), given the present confused context. As more texts become available, our knowledge about effective usage will improve. It also will emerge the degree to which such claims change with time (for example, as a consequence of localised tabooing of words. An instance is the word *bawalami(rr(i))* 'any', which was in general use in the Yirrkala area in the mid-1960's, without any reference to a particular clan. This was banned there around 1970. In 1982 I learned from Neville White (personal communication), that this word is now apparently claimed in the Donydji outstation, where, it would seem, it had never been banned during this period, as being 'really' *Ritharrngu*)).

### 3.2.5 Citations

Examples, where they are included, preferably should come from (published) text material (with short, but precise references). Elicited examples always must be thought of as having a certain 'index of uncertainty', and should therefore always bear a special mark; the same applies to usages heard by the researcher, but not recorded precisely and, perhaps, even to unpublished text material. Perhaps all these cases should be distinguished (although in my sample page in 5 below I have them all lumped together, marking them by the symbol °). Published texts, if written in a different orthography, should be transliterated into the dictionary orthography (a note in the introduction should indicate this).

Certainly, common usage might justifiably be included in some cases, but by no means always. Uncommon usage should be quoted as well as special uses which might need, moreover, some cross-referencing. I do not think that all entries need citations.

### 3.3 Aids to lexicography

It might be proposed that a sort of computer-bank be set up concurrently with the compilation of a dictionary, with ready access to specialists; thus, printouts of, for example, inverse dictionaries, thesauruses and so on, should become available. This, of course, demands a thoroughly thought-through system of detailed sub-categorisations, which moreover should be given in symbolic form (readily interpretable by a computer). I propose that this be presented in a final paragraph at the end of each entry, with a special mark (in my



sample page I have used § for 'want of a better marker on my typewriter'). Although I have not, in my sample page, followed this to its logical conclusion, some of the suggestions I can make at present are the following:

(i) sub-categorisation of nouns: except in classifying languages, this will be mainly semantic. At present, I have followed the sub-categorisations used in Dixon and Blake 1981 *'Handbook of Australian Languages'*; as time goes by, a more refined system might be worked out. I suggest, moreover, that native classification (such as, into 'meat', 'bird', 'fish', 'ray', 'turtle', and so on) should be used wherever possible; that is, even if we are dealing with grammatically non-classifying languages. Terms such as 'stone', 'tree', 'grass', and so on, are understood as 'classifications' in the native language. Some of these terms will certainly need discussion by specialists of an area.

I suggest furthermore that other 'ethno'-information be included here, for example, totemic. Some species are owned by certain groups in that they own the relevant songs, paintings, and/or stories (lower totems); some other species are connected with the sacred/secret sphere of certain groups (high totems). In north-east Arnhemland, species which are judged to be 'similar', or varieties, are referred to by kinship terms. All this may fruitfully be referred to in a final 'computer retrieval' (CR) paragraph.

(ii) sub-categorisation of verbs: besides including finer grammatical information (such as, suppletion, defective verbs, perhaps rough selectional indications), the indication of conjugational classes (already given immediately after the entry) should be repeated. Semantic classification again needs refinement; I have no knowledge of an Australian language where clear 'ethnosemantic' classification of verbs would be appropriate.

In short, it is my idea that the semantic grid, which will have to be agreed upon Australia-wide, should be applied consistently to this CR paragraph only (in short, symbolic form). It is here, where special uses, perhaps banned from the general entries (see 3.1 above), may perhaps be included for the specialist (that is, as cross-references to the technical dictionaries with restricted use).

It is difficult to foresee what role the language community may play as user of such dictionaries and computer data. For the time being, I have little to say on this subject (see also 2.1 above). In what concerns them as producers, more active involvement in dictionary-making is undoubtedly to be commended, if only in the linguists' own interest.

#### 4. OTHER POINTS

##### 4.1 Introduction to the dictionary

General agreement should be reached on the content of any introduction to a dictionary. The following points are submitted for further discussion:

(i) a simple pronunciation guide should be provided (for example, in the manner of Austin's 1981 Diyari Grammar). I am not sure that this is necessary for the phonetic transcription, as I consider it of interest only to the specialist, who should know about what has been agreed upon.

(ii) some form of grammatical information should be given. This should be, I suggest, mainly in table form. Case endings, perhaps pronouns and demonstratives and verb endings should be given; however, only the major variants need to be included.

Zorc (this volume) has suggested that for Yolngu some indication be given as to when a common noun happens to be used as a name, in view of the morphological differences in a subset of the case endings. I find this suggestion of dubious value mainly because it appears to be based on an assumption that we may exhaustively list common nouns as being used (at present) or usable (past, present or future) as proper names or not. Obviously, the exercise is futile. A simple remark suffices, where it is stated that if a common noun is adopted as a proper name, it will of course take the set of proper name case endings. This is all the information needed in a dictionary or in a grammar. In texts we may follow the simple but clear practice of writing common nouns, when used as proper names, with a capital initial. I would, however, recommend the separate compilation of lists for:

- (a) Proper Names (with geneological details where possible);
- (b) Place Names (the full specification of geographical, ecological, mythological details must necessarily be provided by specialists other than linguists);
- (c) Names of Dogs (where possible record owner, kinship relations among dogs - in north-eastern Arnhemland mainly expressed in terms of subsections - because the theoretical system is more systematically applied than with humans);
- (d) Names of Vehicles (cars, boats, with details on owners).

Morphophonemic information definitely needs only a cross-reference to the grammar. However, some morphophonemic indications may be usefully included in the introduction, if they occur in *regular* (perhaps not necessarily productive) compoundings and derivations. Also, major dialectal correspondences may be given, if they are regular and may be formulated briefly and precisely (as, for example, in Yolngu, where *b/g* - *w* and *dh/dj* - *y* occur as regular dialectal correspondences in certain environments).

(iii) a list of dialects and subgroups should be provided (keeping in mind the distinction between the linguist's and native theories on all levels - see 3.2.4 above).

(iv) a map should be provided.

(v) a list of all publications should be provided (grammars, other dictionaries/glossaries, text publications).

(vi) some anthropological data may be given; for example, it would be commendable that a kinship table with brief explanations be added.

(vii) some anthropological references might be given, but I do not think it necessary to give a full anthropological bibliography. A similar remark applies to other specialists' work (for example, biological data, zoologists' and/or botanists' studies; they should be quoted, however, if scientific terms given in the dictionary rely on their work).

(viii) a table should exhaustively summarise all the transcriptions used to date in published material

(ix) similarly, any divergences in classifications (for example, numbering of verb and/or noun classes) should be summed up in table form.

#### 4.2 Word taboo

The tabooing of words has been finally recognised as a (not yet fully assessed) factor in linguistic change in Australia. We have as yet little precise idea on the rate of such replacements nor on the 'recycling' of words which may be revived after a certain period. I, therefore, would recommend a recording of all the known instances in the following form: if possible, year of tabooing, and, added in brackets, name of deceased where available; revival, if known, in the same manner. If known, indicate if this is connected to the tabooing of another word (such as the one which is being replaced by the 'recycled' word). Future research might thus eventually find an answer to the question of whether there is some cyclicity in the re-emergence of old words or not. This information needs to be given only in the CR paragraph at the end of an entry.

#### 4.3 Upgrading

Unlike the case with European dictionaries, thought has to be given to the problem of upgrading; every linguist in Australia knows how much we are as yet at the beginning of our understanding of Aboriginal semantics. Rather than waiting indefinitely because of this, before we compile dictionaries, we should discuss some coordinated way of upgrading them. In some areas, the problem will pose itself less acutely than in others; hence, a general timetable appears futile. The point I wish to make here is this: it appears to me that in areas where the material available warrants the edition of a dictionary, but where later research proves to be prolific in the lexical sphere, there should be a first phase of editing supplement volumes, and/or addenda for uncovered mistakes, rather than reprinting the whole dictionary. Only if these additions appear voluminous enough, and research shows that the process of new discoveries has slowed down considerably, may a new edition of the dictionary be contemplated.

In languages which are still fully alive, it may, however, be advisable to update the tabooed list (see 4.2 above) periodically, perhaps something like every five years. It is arguable whether such a list should be published at all, as a simple addition to the computer data storage might suffice.

A similar remark applies to the compilation of concordances, once sufficient text material is published.

#### 4.4 A plea for regional agreement

I wish to strongly stress the fact that regional decisions are absolutely essential before anything may be undertaken concretely. Therefore, I see the workshop in the first place as a fact-finding exercise, which should ideally lead to some broad guidelines. Linguists in the various language areas then should get together and work out some form of agreement, closely following those guidelines (any challenge to the guidelines must be based on proven difficulties with following them, not on some deep-seated distaste for some form of convention). Having strong personal feelings against setting up committees, commissions and other club-like formations, I nevertheless would suggest that some group of co-ordinators may emerge, so that a speedy advance is ensured. Uniformity, preferably Australia-wide, should be a main purpose, without forcing the odd cases into an unfitting mould.

#### 5. SAMPLE ENTRIES

The following are sample entries selected from my Yolngu dictionary which is based on the Dhangu dialects. In the main body of each entry, the following labels are used: *Adv* for 'adverb'; *Excl* for 'exclamation'; *N* for 'noun'; *iV* for 'intransitive verb'; *IV* for 'dative verb' (perhaps better *dV*?); *tV* for 'transitive verb'; (*I*) following indicates a 'class I' verb (using Zorc's recent verb classification proposal); *Syn* for 'synonym'; *cf.* is a cross-reference for non-synonyms or part-synonyms (as in the adverbial use below of *baḡak* and a specialised use of the verb *mukthun*, literally, 'to be quiet/silent'); *RF* refers to 'root forms' of verbs; *Rdp.* to reduplications.

Examples are numbered for each entry; explanations of the examples are avoided. Also, notes are not frequent. However, I have thought it useful in the entry for *baḡatjtjun* to indicate Heath's 1980a gloss 'to spear' in his Dhuwal Grammar, because to my knowledge this is a mistake.

In the last line (for specialised uses, marked by \$), I have used the following abbreviations:

A = adverb;  
 E = exclamation;  
 A/E = A or E;  
 N = noun;  
 V = verb.

These, where feasible, are indexed as follows:

a = 'aspectual';  
i = 'intransitive';  
t = 'transitive';  
D = 'with dative';  
fl = 'floral';  
c = 'celestial';  
w = 'water-dwellers (other than fish)'.

For verbs, I have used the semantic labels 'PE' (for 'physical effect') and 'TH' (for 'throwing, hitting, and so on'). The quotation marks hint that these are semantic labels. For nouns, I have given, in addition, some native classifications; for these the label is underlined: ḍ stands for (ḍ) *ḍharpa* 'tree'; and (ḍ) *ḍiltjiwuy* 'from the bush (as against the beach, jungle, and so on)'.

Finally, *Rdp* refers to 'reduplication'. For both, 'root forms' (*RF*) and 'reduplications' (*Rdp*), + indicates presence (of regular root form, that is, class I verb minus ending *-thun/yun*, and of reduplication; that is, with relevant lenitions, dropping of syllables, and so on), - indicates absence of *RF* or of *Rdp*; the index <sub>i</sub> indicates 'irregular' reduplications, the index <sub>r</sub> might be used (no example here) for a 'residual' *RF*, that is, a root form which cannot expand into a full verb form; the index <sub>s</sub> for suppletive will be reserved for cases where only one of a class of synonymous verbs forms a regular root form, which is then extended to the other verbs which do not allow for the dropping of the verbal suffixes; for example, *dharkthun*, *rathan*, *lawuma* all mean 'to bite', but only the first verb contains the *RF* *dhark*.

The examples are (note that the standard Yolngu symbol ṇ is here spelled as *ng* for typographic convenience):

-ba, *var.* → -pa

baba- (*dial*) → bawa

badak [baḥḍak] *Adv.*, still, yet

(1) \*badak nhan ngoya yak(uy)a '(s)he is still sleeping'

(2) \*badak nhan yaka ngoya (yak(uy)a) '(s)he is still not sleeping/  
asleep, (s)he is not yet sleeping/asleep'

*Cf.* → mukthun

*Excl.*, badak, or badak badak 'hang on!, just a moment!, wait  
(you'll see)!'

*Cf.* → bulnha

@ A/E<sub>α</sub>

badatjtjun [bʌ'dæʏtʃʉn] tV (I) 'to miss an aim or target'

IV (I) 'to fail someone'

(1) °badatjtjuwan ngaya nhuna 'I missed you' (e.g., when hitting at you; also when looking for you)

(2) °badatjtjuwan ngaya nhunggu 'I failed you' (e.g., by not turning up as promised)

Rdp. bada?badatjtjun ['badaʌ?bʌ'dæʏtʃʉn] 'to miss many targets/always'

Rf. badatj [bʌ'dæʏtʃ] 'missed!' (Yolngu English: 'miss!')

Syn. witjar'yun  
(Heath, (1980a), 'to spear')

@ V<sub>t/D</sub>(I), "TH", RF+, Rd<sub>i</sub>

badarratjtjun ['badaʀæʏtʃʉn] iV(I) 'to (be/become) hurt(ing)'

(1a) °maka ngaya badarratjtjuwan (with Past) }  
(1b) °maka ngaya badarratjtjun yaka (?) } 'My thigh is hurting'

(2) °ngaya ngarru make badarratjtjun 'My thigh will hurt'

Rdp. bada?badarratjtjun 'to be hurting all over'

Syn. → batjpatjtjun, rerrikthun

@ V<sub>i</sub>(I), "PE", RF-, Rd+

badawili ['badaʷæʏlɪ] 'eucalypt sp' (Not identified)

Cf. → gulu'gulun (mala); nhami, rangan

@ N<sub>FL</sub>, Dd, Rd-

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## LEXICOGRAPHY AND THE NDJEBBANA (KUNIBIDJI) BILINGUAL EDUCATION PROGRAM

G. R. McKay

### 1. INTRODUCTION

In this paper I do not propose to develop any new theoretical breakthroughs in Australian Aboriginal lexicography, but rather to present some notes on my own experience in beginning the compilation of a dictionary for the Ndjébbana (Kunibidji) bilingual education program at Maningrida, in Arnhem Land, where I was employed by the Northern Territory Department of Education to carry out linguistic research in support of the development of the bilingual program. My lexicographical production to date has consisted of a preliminary dictionary totalling about 270 pages in four parts based on different word classes. These sections were compiled over a period of about eighteen months and are still awaiting integration into a single work. These (McKay 1981a, b, c, 1982) provide the basis of my comments in the present paper.

Probably the most influential considerations in the compilation of a dictionary for any Aboriginal language are the nature of the intended users of the dictionary and that of the intended uses to which it may be put. In the context of dictionary compilation for a bilingual education program these two sets of considerations are very important and present many problems.

### 2. USERS

The main potential users of a dictionary for the Aboriginal language in a typical Northern Territory bilingual education program include all of the following:

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*Australian Aboriginal lexicography*, 57-70.  
*Pacific Linguistics*, A-66, 1983.  
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- (i) the linguist who compiled the dictionary himself;
- (ii) a succeeding linguist if the compiler should leave the program and need to be replaced;
- (iii) the teacher-linguist - a non-Aboriginal teacher who has the task of co-ordinating the bilingual program and developing curriculum materials in the vernacular. This person typically has minimal linguistic training and may or may not have mastered the language with any degree of success. Other non-Aboriginal teachers involved in the program may be included here too;
- (iv) Aboriginal literacy workers and assistant teachers involved in writing in the vernacular or in implementing the program in the classroom or in assisting in the curriculum development process;
- (v) the literature production supervisor - the person responsible for the actual publication of materials through all stages of editing and production;
- (vi) vernacular speaking children, perhaps most likely in the later years of the program;
- (vii) members of the general community - both Aboriginal and non-Aboriginal. Here we might include other linguists with comparative or theoretical research in view.

The major factors here are the variation in skills in the Aboriginal language (and in English for that matter) from native speaker competence (which varies with age) through second language competence to non-speaker competence, and the variation in technical linguistic skills from an experienced, trained linguist to the totally untrained and naive. Ideally, no doubt, several distinctly different dictionaries should be compiled, suited to the needs of each category of users. For instance, a native speaker of Kunibidji would need only a brief reminder of the translation equivalent in Kunibidji of an English word he had temporarily forgotten to set him on his way in his own language, so a simple English-Kunibidji listing would be sufficient. A newly appointed teacher-linguist, however, would need a great deal more information regarding, for instance, parts of speech, semantic range and grammatical constructions before he or she could use the Kunibidji word correctly. The roles, of course, would be reversed in the Kunibidji-English listing where it is the teacher-linguist who has native command of the target language. Nevertheless, the work involved in compiling several distinct dictionaries, especially when done by hand, makes this ideal largely unachievable, at least in the early stages of the program.

### 3. USES

The main intended and potential uses for a dictionary in an Aboriginal bilingual education program are as :

- (i) a guide to spelling. This function may be important to all users. Sommer (1980:4-5) has commented on the gap between accurate reading skills in the vernacular and the lack of consistent accurate spelling in the vernacular, irrespective of the phonemic adequacy of the relevant orthography.

(ii) an analytical and research tool in all areas from phonology and morphology through syntax and discourse to semantics. This function is important mainly for the linguist in the program.

(iii) a language learning tool. This function is relevant for all non-Aboriginal personnel involved in the program. It could also be relevant as a language learning or rather language enrichment tool for Aboriginal children who are learning to probe further into their language as they progress through the school. Related to this function is that of preservation of the language for coming generations.

(iv) a translation aid. This affects all those working on materials development where this involves translation in either direction. It is also relevant for Aboriginal people reading in English and for non-Aboriginal people reading the Aboriginal language.

(v) an aid in such areas as song writing, the compilation of topical materials, controlled vocabulary materials, and so on. The dictionary might provide information to answer such questions as "What word is available of X number of syllables of Y stress pattern denoting a marine fish to fit the metre of this song?", or "What feminine plant names are available for use in a given context to illustrate or test the use of feminine prefix forms?".

(vi) a curriculum development tool in 'ethno' subject areas. The dictionary should eventually be developed to encyclopaedic proportions giving detailed information on semantics and usage in areas such as social organisation, ethnoscience, vernacular mathematics (in the broadest sense, including number, measurement and classification, such as colour) and traditional technology.

(vii) a guide to usage and the grammatical properties of words, for instance how many arguments a verb takes and what types, co-occurrence restrictions and so on.

(viii) a definer of meaning.

The list of uses given here, coupled with the list of users above, implies a vast project in lexicography. Both Kunibidji-English and English-Kunibidji listings will be required. At least in the Kunibidji-English section, full grammatical and morphological information will be required (even if only in the form of references to more detailed discussions) and full details of the usages and semantic systems involved in the vernacular will need to be presented. This sort of information is less crucial for English in the dictionary, since Aboriginal speakers of English as a second language are able to consult various commercially available works for this sort of information. On the other hand, such works are not tailored at all to the needs of speakers of Aboriginal languages or of Aboriginal English. Finally, lexical domains lists or thesaurus-type listings and extensive cross-references to relevant material will need to be included.

#### 4. CROSSCUTTING FACTORS IN THE EDUCATIONAL PROGRAM SITUATION

I would like to highlight two factors which greatly affect the course of dictionary compilation in a bilingual school situation, given the overall vastness of the undertaking:

(i) the urgency of the need for a dictionary means that it must be produced in a preliminary form fairly early in the development of the program and hence it will require constant revision and upgrading. The early forms of the dictionary may well be most unsatisfactory from the technical linguistic point of view, but the demands by other staff in the program for this sort of material force the linguist to produce an interim work quite early without having the academic leisure to ensure that it is foolproof before it is made available to the users.

(ii) staff turnover will mean that nothing can be assumed to be known and the compiler cannot bank on a growing knowledge and expertise among the users of the dictionary. At any time, new staff members, black or white, may be starting work in the program and will need everything provided right from first principles.

#### 5. SPECIFIC LINGUISTIC ISSUES

At this point, it is probably most profitable to mention a couple of practical linguistic issues which affected the process of dictionary compilation in Ndjébbana (Kunibidji), a non-Pama-Nyungan prefixing language. Following that, we will briefly look at some sample entries in the preliminary version of the dictionary.

##### 5.1 Citation Forms

Since it is a prefixing language, a problem arose in the Kunibidji case regarding an appropriate citation form, particularly for verbs, which in almost all cases may never occur without a prefix. In addition, some nominals bear an obligatory gender class prefix. Should the underlying root form be used - with the further complication that in some cases the initial consonant of the underlying root is always modified in the surface form - or should a particular prefix-bearing form be used? If the latter, which prefix and, for that matter, which suffix?

The linguist, but not as yet other personnel, can handle the listing of the underlying root. The Aboriginal staff should have the ability to convert any full vernacular form to a different particular person/tense form. The non-Aboriginal staff will have difficulty with either system - decreasing with increasing mastery of the language. In fact, we have used the third person singular masculine subject form (with, where applicable, third person singular masculine object) of the Past 1 (roughly 'present') tense. This has the unfortunate result that almost all verbs are listed under the letter 'k' in an alphabetical listing (the subject prefix being ka-). Even this is not an invariant rule. For instance, the verb root *-ndamerbaya* 'to set (of sun)' does not take a masculine subject prefix since the sun is feminine in the

language. This verb has to be listed under 'y', since the feminine prefix form is *ya-*. Other isolated verbs are listed under other letters of the alphabet for a variety of reasons, but these verbs are rather rare (see, for another example, the *birridjdjoya* entry below).

## 5.2 Suppletion

There are many suppletive verbal forms which present problems to all but the native speaker-user. Even younger native speakers have often not mastered all these forms nor many of the more unusual of the eighteen verb conjugations. For full usefulness, each of the suppletive forms needs to be included in the alphabetical listing and information on the regular conjugation patterns needs to be given. This has been done by listing the conjugation number of a verb together with its underlying root form so that reference can be made to a fuller treatment of verb morphology contained in another paper (McKay 1980). In addition, the 'principal parts' of the verb are given (that is, the third person singular masculine form of each tense and, where necessary for the Auxiliary Past 2 Negative construction, the infinitive form).

## 5.3 Word Classes

The definition of word classes is not yet fully clear, though nominal and verbal roots can be fairly adequately defined. The lack of definition for the other word classes does not, of course, affect one's ability to list these roots alphabetically, but it does point to a lack of pertinent morphological and syntactic information. It was not possible to delay compilation of an interim dictionary until word class definitions could be established. As further data are amassed and analysed, it can be expected that these details will be established satisfactorily.

## 5.4 Variation

There are a number of variations in dialect and idiolect, as well as some age-based simplifications. These affect lexical items, verb morphology and some individual phonemic segments. I will not go into details here, but refer the reader to McKay (forthcoming); see also the entries for *ngálngarda* and *yéna* below. These variant forms need to be listed in the dictionary. It has been our policy in the program not to impose standardisation from outside but, as I say in my paper : '... to admit whichever form is an accurate phonemic representation of a genuine spoken form'. Standardisation may or may not evolve as literacy becomes established. At this point in time, the dictionary must remain descriptive rather than prescriptive, since the criteria for prescription of a standard have not yet been established. A descriptive dictionary must recognise those variants which do occur, even if at a later date one of these can legitimately be prescribed as a standard form. Standardisation must be carried out by the language community, not by the linguist.

## 6. SAMPLE ENTRIES

As an appendix to this paper, I have included details of the layout of Nominal and Verb entries. We will begin by looking here at a selection of Nominal entries.

The first of the two entries for *makéddja* 'turtle' is a generic term with a list of specific terms under it. The following entry contains a homophonous form of opposite gender which is actually one of the specific terms. Glosses are not given for all the specific terms because identifications have not been made - a sign of the 'in progress' nature of the dictionary as it stands.

*makéddja* N.I. M turtle (generic)  
Includes: *marládja* N. 'green turtle'; *yúrnkankáya* N. 'loggerhead turtle';  
*madjírndi* N.; *barrakanóriba* N.; *djarídda* N.; *makéddja* N. F. 'long-necked  
turtle (freshwater)'; *ngárd* N. 'short-necked turtle (freshwater)'

*make'ddja* N.I. F Y long necked-turtle (freshwater)  
cf. *makéddja* N. M 'turtle (generic)'; *ngárd* N. 'short-necked turtle  
(freshwater)

The following three entries for *ngalidjbínja* show differences in meaning correlated with different declension classes and genders. The long, tubular shape is no doubt the common semantic denominator of these nominals. Note under the 'shotgun' term the list of terms for the various part of a gun. The example under 'didgeridoo' shows the verb used with this nominal and a further nominal relevant to the situational context. The example sentences provided in these entries are actually more important for grammatical analysis than they are for understanding or defining the semantics of the nouns involved. In the sentence under 'gun', the adjective *njamádjarna* 'proper' bears the feminine prefix *nja-*, proving that the noun *ngalidjbínja* is feminine here. In the sentences under 'didgeridoo', the verbs take the prefix form *ka-*, indicating third person singular subject and third person singular masculine object. If the object were feminine, the prefix form *yaka-* would be required. This clearly proves the noun to be masculine here.

*ngalidjbínja* N. II throat, windpipe

*ngalidjbínja* N. I F gun, shotgun

Compare: *djúya-ngaya* N. 'butt'; *márdba yakaréndjeya* N. 'barrel'; *dfla-ngaya/dflarra-ngaya* N. 'shell/cartridge'; *drika* N. 'trigger';  
*kabardórrbbiriba* 'hammer'

*Ngalidjbínja njamádjarna kóma babuwúyakka njúngkowara njayaremingana.*  
'Before, none of us had proper guns.' (V/60)

*ngalidjbínja* N. I M didgeridoo  
*Ngalidbínja kárama./Ngalidjbínja karamíyana.* 'He is playing the  
 didgeridoo.' (GN/51/12-13)  
 cf. *nganamayáwaya* N. 'clapsticks'

The two entries for *ngálngarda* show a case of homophonous forms as well as a case of dialect differences. A more minor dialect difference is found with the Adverb *yéna* 'today'.

*ngálngarda* N. I M spring, well  
 = *nbalóyara*

*ngálngarda* N. I M fire  
*Djówanga* dialect only (Jocky Bundubundu).  
 = *Yírriddjanga* form *yúya*

*Ngálngarda warábbana yiberrekéyanga, birringárawana.* 'They lit one fire for two of them (for sleeping).' (V/359-360)

*yéna* Adv (earlier) today  
 Used with Past 2 tense only.  
*Djówanga* dialect form *yána*

The series of entries *nganabbárru* to *nga-nabélbala* shows the distinction between forms listed under root-initial consonant (as *nganabbárru*) versus forms listed under third person minimal (singular) masculine prefix initial. In these examples, the prefix has been separated off by a hyphen, though this does not appear in the normal orthographic representation of the words. The presentation of moiety, declension class and gender, where applicable, can be seen. Uncertainty or incompleteness of analysis is seen in the *nga-nabbórla* entry with respect to declension class and in the *nga-nabbórnba* entry with reference to semantic range. That is, the final note in this entry is intended as a cautionary qualification pointing to the need for more work in verifying this meaning.

*nganabbárru* N. I M Dj buffalo  
 cf. *ngalyábbana* N. 'horn'

*nga-nabbórla* N. ?V "quiet", tame, not dangerous,  
 harmless  
 Opposite: *warríwarra* N. "'cheeky", dangerous'

*nga-nabbórnba* N. V  
*Kabíwaya nganabbórnba barrangúdja.*

stinking, rotten, dead  
 'The rotten animal stinks.'  
 (GD/11/19) XVII/44 used of  
 freshly caught fish - merely dead  
 not rotten.

*nga-nabélbala* N. V little one, young person  
*Bábbá, kíkka, balúbbala, máwa barrayawéla kómabba barrarendjína...*  
*djimanjdja njírrabba njarranabélbala njarraróddjiba njarranóra.* 'Father,  
 mother, grandparents have all died, but we 'little people' (younger  
 generation) are still here. (III/15-18) (speaker Willy Djárrkkarla)

*nga-nárarrma* is an example of a nominal derived from a verb. The cross-reference is to the verb root *-rárrma* rather than the prefixed form *karárrma* because this nominal entry was written twelve months before the decision was taken to list verbs with prefixes. The root is still accessible via McKay 1980. It is matter for future editing to bring this into line with the practice adopted in the verb glossary. This type of problem is obviously going to emerge frequently where the demand for a usable dictionary is so urgent that a preliminary draft of work in progress has to be pressed into service in the school.

*nga-narárrma* N. I white; ?light  
 cf. Verb *-rárrma* I 'be white'  
*ránba nganarárrma* 'clean sand' (GF/33/4)  
*Nganarárrma ngíyawo.* 'We'll sell it to the white man.'  
 (I/273)

The *ngarráku* entry shows how miscellaneous general background information may be included, while in *-ngárridj*, we have a case where comparison is made with terms from other languages.

*ngarráku* N. I Dj Haul Round Island.

(Seagull eggs collected there annually.)

Appears that Haul Round Island actually consists of *ngarráku* and *nabaréla* which are only joined at low tide. (GN/57)

*-ngárridj* N. VII Dj (Subsection name)  
 = Eastern Arnhemland *balang*



Turning now to verbs, we see in the *birridjdjôya* entry both an example of a derived verb (reflexive/reciprocal suffix) and an example of a verb which may not take a singular subject (on present information) and thus is not to be listed under 'k'.

*birridjdjôya* V intr II *djôya* argue with each other  
*birridjdjôyana* P2; *biyiddjôya* FUT; *biyiddjôyana* P2NEG  
 Reflexive/Reciprocal of *kadjdjôngka* V tr (*djô*) 'be angry with'

Note that the headword of this entry contains the cluster *-ddj-* which is simplified in the rest of the entry to *-ddj-*, according to the usual Kunibidji orthographic practice. Such simplification conventions reduce, for instance, *-ndj-* to *-ndj-* and *-rdrd-* to *-rdd-*. In the headwords, these clusters are spelled out in full to disambiguate any possible underdifferentiations and as a guide to the phonology. For instance, *-ndj-* could represent either *n + dj* or *nj + dj*. The functional load of such distinctions is very low.

The other two verb entries, *kadjdjôrrbara* and *karakarawo* show how the examples serve to define meaning and usage. In this sense the examples themselves form an integral part of the gloss or definition for the person who is not a native speaker of Ndjébbana. All the verb entries given here show clearly how conjugation class, transitivity and underlying root form, as well as the 'principal parts' of the verb are set out. Note the occurrence of a suppletive form amongst the 'principal parts' of *kadjdjôrrbara*.

*kadjdjôrrbara* V tr IV *djôrraba* cook; start (engine) run  
*kadjdjôrrbana* P2; *kayadjdjôrraba* FUT; *kayabalangóna* P2NEG  
*Ngangárawaya yúya, njarradjôrrbara, djanímarra.* 'I made a fire and we cooked it in the coals.' (XXV/63)  
*Ngalidjbínja, njana djúyangaya yakadjôrrbana.* 'Gun (?cannon), and he set fire to its butt end.' (Ref. to Macassan guns) (V/63)  
*Nayúkana yindjin rdórbalk kómabba, nakadjôrraba nalakaláya*  
*kayadjôrrkkangaya yindjin mádjarna.* 'Check the engine is all right, start it up and listen that it is running properly.' (Manayingkarírra Djúrrang No. 3, Aug. 1981:18)

*karakarawo* V intr IXB *rakarawo* Move (also used as part of two phrases meaning 'forget' and 'run' - see below)

*karakarawéra* P2; *káyarakaro* FUT; *kayarakarawóngana* P2NEG

"*Yarakarawo*", *kangúdjeya ngabúyanga*. "*Kóma*." ....

*Bárrarakarawo karrabba djíbbba njana ngání* ...

*Nganáyabba yeláwa barraréndjeya*. "'She'll go/get away", he said to me.

"No she won't" ... They moved off that far and stopped there.' (Reference to wounded female buffalo and other buffaloes with her.) (XXV/43-47)

*Birrikémala birrirekarawéra, yókkarra birrirána*. 'The two of them ran, they speared some fish.' (VII/87-88)

*Karíkkaya kiyirríya. Káarakarawo kiyirríya*. 'He crept up (towards sitting buffalo)'. (XXV/40)

AUXiliary use.

This verb is not common except in the Aux usage exemplified here and in the phrases listed below. Compare other AUX verbs *kanóra* V intr 'sit', *karénjdjeya* V intr 'stand', *kayóra* V intr 'lie', *kayirríya* V intr 'go', etc.

*Kawalédjba karakarawéra kabéna ... kabálko kawálanga*. 'They paddled across and went ashore on Entrance Island.' (VII/72)

*Kawákka káarakarawo banamánga djíbbba*. 'The boat went back and picked up another load for here.' (XXV/98)

*Yanakkábba karendjína karakarawéra ngána kabálko*. 'There was dry land right out to Entrance Island.' (VII/70)

*Barrabalákkana barrabalarekarawéra*. 'They came back.' (*Nganabbárru Bandawoddobéra* Margaret Kawunbáni)

*kalábba káarakarawo* 'forget' 'lose'

Particle *kalábba* invariant. But cf. *kalawáya* V tr 'know' (?)

*Kalábba nganarekarawéra*. 'You forgot.' (V/32-33)

*Ngaléwara kalábba nganarakarawéra?* 'What did you lose?' (packet of cigarettes) (V/169)

*kakkúnjdja káarakarawo* 'run'

See under *kakkúnjdja káarakarawo* V intr ? listed alphabetically under *kakkúnjdja* V tr.

Finally, let us return momentarily to nominal entries beginning with *b* to see how root-initial peculiarities are handled. After the masculine prefix *n-*, both these roots have a single (voiced) initial stop. After the feminine prefix *nga-*, however, they differ. As indicated in the first line of the entry, the word meaning 'raw' has a root-initial geminate (voiceless) stop in the feminine (*njabbarlánga*), while the word meaning 'big' retains its single (voiced) root-initial stop in the feminine (*njabarrábarra*).

*barlánga*                      N. IV                      -bb                      raw, unripe  
*Kadjórrbana kabála, nganáwarla nbarlánga kabála.*                      'They cooked it and ate  
it, others ate it raw.'                      (VII/20)

*barrábarra*                N. IV      -b                big (?primarily width)  
Opposite: *nga-namánda* N. 'small'  
Idiom: *Kawákkana nbarrábarra.* 'It (boat) went backwards.'

## 7. CONCLUDING REMARKS

In this paper I have presented some brief notes on some of the issues which need to be raised in preparing a dictionary for a bilingual education program in an Aboriginal language. The problems of preparing a bilingual dictionary which is equally useful for native speakers of each of the languages involved have been discussed by other writers, including Haas (1975: 47-48), and there is no space to elaborate any further here. The multiplicity of purposes to be served by a dictionary for use in a bilingual education program point to an all-embracing, encyclopaedic compilation. I have presented some examples of the way in which the task was approached at Maningrida. The process was very much a trial and error one, and the work is still far from complete. Only the use of the materials over time will tell whether the approach used was appropriate to the language itself, to the needs of the education program and to those of the users of the dictionary.

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## APPENDIX

Layout of Nominal Entries

Nominal Root	= Nominal	= Number of Class	= Gender	= Moiety	= Gloss(es)
<i>babbúya</i>	N	I	M	Y	ironwood tree
<i>bamakánba</i>	N	I	F	Dj	stringy bark tree
<i>-barrábarra</i>	N	IV	-b		big

In cases where gender is not fixed, a single or double stop in the gender space indicates whether the root-initial stop geminates after a prefixal vowel.

Below the first line of the entry as set out above will be found such things as lists of synonyms, related terms, other dialect forms, opposites and terms from other languages, as well as example sentences. References to examples are to my original notes or text transcriptions as follows:

(Roman Numeral/Arabic numeral(s)) (G plus one other letter/numeral/numeral(s))  
 Text Number/Line Number(s)      Notebook number/page number/line number(s)  
 e.g.      (XVII/23-25)      (GF/31/14)

Roots of classes I to IVA inclusive are listed under root-initial letter, while roots of other classes are listed as 3 min. masc. forms prefix initial letter.

[For details of Nominal Classes, see McKay 1981a: 111]

Layout of Verb Entries

The following information is contained, where applicable, in each entry:

3 min. masc. Past 1 form of Verb	V = Verb tr = transitive intr = intransitive ditr = ditransitive	Conjugation Class No.	Underlying root form	Gloss(es)
<i>kárama</i>	Vtr	VI	<i>rími</i>	hold in hand
<i>karaméra</i> P2; <i>kayaríma</i> FUT; <i>kayaramíngana</i> P2NEG				

List of other principal tense forms, all in 3 minimal masculine where possible.

Then follow examples, idioms, special usages and constructions, and other notes including other lexical items for comparison and contrast, related words, etc..

The conjugation Class No. and the underlying root form are references to the paper 'Ndjébbana (Kunibidji) Verb Conjugations (Interim Account)' where fuller morphological detail, including details of morphophonemic rules may be found.

The references given with the examples are mainly to my original text transcriptions or data books as follows:

(Roman numeral/Arabic numeral(s)) (G plus one other letter/numeral/numeral(s))

Text	number/Line	Notebook	number/page number/line
	number(s)		number(s)

e.g. (XVII/23-25)

(GF/31/14)

In addition, some examples come from publications of the Maningrida Literature Production Centre (Title (underlines) and author), stories collected on tape in the bilingual program (Adult stories A plus number, child stories B plus number), personal communication (name and date), or material translated into Ndjébbana in the paper *Manayingkarírra Djúrrang* or various story books.

A LEXICOGRAPHIC STUDY OF SOME AUSTRALIAN LANGUAGES:  
PROJECT DESCRIPTION

Kenneth Hale

1. INTRODUCTORY REMARKS

The purpose of this project is to compile lexicographic resource materials, or dictionaries, for five Aboriginal Australian languages: (1) Warlpiri, (2) Warlmanpa, (3) Ngarluma, (4) Lardil, (5) Linngithig, and one language-dialect complex, Arandic. These belong to the so-called Pama-Nyungan family (cf. O'Grady, Voegelin and Voegelin 1966, Wurm 1971, 1972) and their location in Australia is indicated on map 3 (page 72).

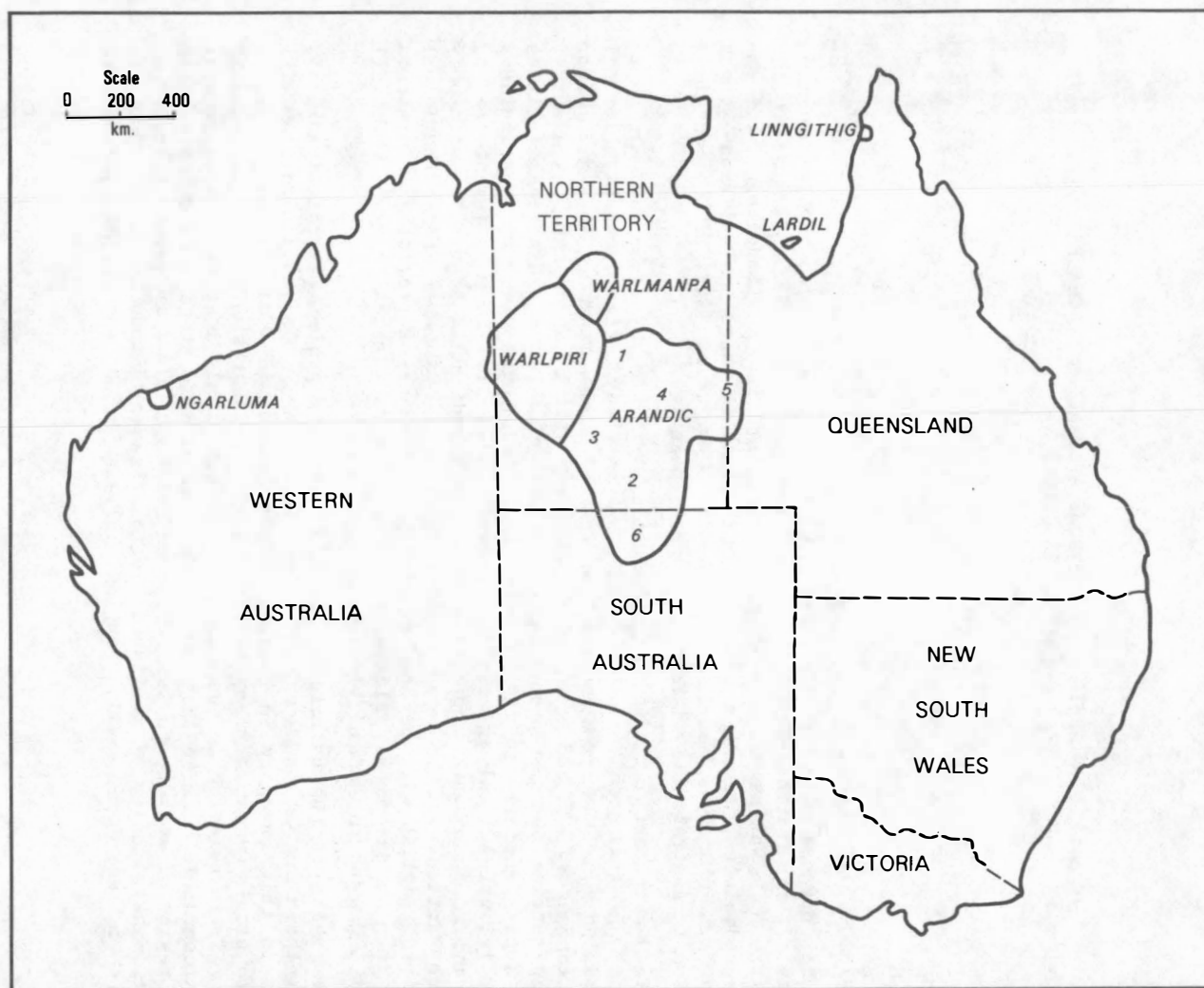
To the extent that it is practicable, our aim in each instance is to provide the full complement of semantic, morphosyntactic, and etymological information which we possess for the lexical items existing in our data on these languages. In addition, each dictionary will be accompanied by a survey grammar setting out the phonological, morphological, and syntactic principles which apply generally in the language and, therefore, need not be stipulated for individual lexical items. The grammars will also include inventories of bound and free morphemes comprising closed or paradigmatic sets. The main body of each dictionary will be oriented from the point of view of the Aboriginal language. English will be used primarily as a means of providing information about the lexical items, although an English-first lexical finder list will also be appended to each dictionary.

We refer to the anticipated products of this project as 'dictionaries', though the term is applied here in a special way. In particular, we will aspire to this category in regards to the content of entries, but we cannot hope to attain the dictionary level of lexical attestation, as it is commonly conceived, in relation to the number of entries. This last is true in general of lexicographic work on Australian languages at this stage (see O'Grady 1971, for a review of work up to 1968). If we think of 'size' in terms of number of entries, the majority of published dictionaries (or vocabularies, as they are usually called) are small, ranging between 1,000 and 2,500 entries (for

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Peter Austin, ed. *Papers in Australian linguistics* No. 15:  
*Australian Aboriginal lexicography*, 71-107.  
*Pacific Linguistics*, A-66, 1983.

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Map 3: Approximate location of languages involved in the dictionary project



example, Teichelmann & Schürmann 1840, Schürmann 1844, Moore 1884, Oates & Oates 1964, Holmer 1967, Geytenbeek & Geytenbeek 1971, Hall 1971, Breen 1973, Reece 1975, and vocabularies appended to grammars, such as Smythe 1948, Capell & Hinch 1970, Dixon 1972, 1977), though a few larger dictionaries, ranging from 4,000 to 7,000 entries have also appeared (for example, Hughes 1971, Hansen & Hansen 1974, Coate and Elkin 1975). Of the dictionaries to be developed in this project, only that for Warlpiri will compare in size with the larger published ones; the rest will belong to the smaller category.

In all cases, our primary focus is upon the content of entries. Within a typology of dictionaries, ours will belong to the "overall-descriptive" or "reference" type (cf. Zgusta (1971:210)). We feel that it is essential to progress in the study of Australian Aboriginal languages, and to the task of ensuring that their testimony be offered in the study of human language generally, that reference dictionaries be made available for use by scholars of all sorts - grammarians, comparativists, lexicographers, applied linguists, and especially scholars who are based in Aboriginal communities. An important part of our effort in this project is to develop a model for the design of such dictionaries for Australian languages. Our success in achieving this goal will vary according to two factors - the data available, and our own areas of competence. Our data on Warlpiri far exceed those for the other languages; accordingly, our treatment of lexical items in Warlpiri will be much richer than in the other languages. In general, however, the spirit of the enterprise will be the same for all, since the goal will be to give the maximum amount of information, within the limits of our abilities. Since our competence and primary interests are in areas of grammar, our entries will give rather more emphasis to issues relating to the articulation of the lexicon with the grammar than to other areas of lexicographic concern. This emphasis is somewhat novel, for Australian dictionaries, certainly, and the importance we attribute to it will be discussed again below.

## 2. THE CONTENT OF LEXICAL ENTRIES

### 2.1 Morphophonological information

The languages of this project all belong to the suffixing type; nouns are inflected by suffix for case; verbs are inflected by suffix for tense, mood, and aspect; and productive derivational morphology is likewise suffixal. While the general principles of inflection and derivation will be given in the grammars accompanying the dictionaries, each lexical entry must, of course, indicate all morphophonemic properties specific to it - all morphophonemic behaviour of the lexical item which is not predictable from its phonological representation or syntactic category. This is relatively non-problematic in the languages with which this project deals. In Warlpiri, for example, the conjugation membership of verbs must be indicated, since it is not predictable from the phonological shape or syntactic subcategory, but with minor exceptions, the allomorphy associated with nominal inflection is entirely regular. In Lardil, with some exceptions, morphophonemic alternations are entirely regular, given the underlying phonological representation of stems. In the case of Lardil nominals, however, it happens that the underlying representation is distinct from the citation (or nominative) form. While the two forms are related by rule (cf. Hale 1973b, Klokeid 1976a), the Lardil

dictionary will be most useful if nominal entries are designed so that both forms can be apprehended at a glance. Linnithig exhibits somewhat greater surface irregularity, making it necessary to stipulate inflectional category both for nouns and for verbs. But this, in general, is the magnitude of the problem. In no case is the problem great, and the decisions which must be made concerning the form of entries are quite straightforward. Much more difficult is the task of providing adequate information concerning the syntactic behaviour and meanings of lexical items.

## 2.2 Syntactic information

It is a fundamental responsibility of reference dictionaries to stipulate as precisely and as thoroughly as possible the syntactic behaviour of lexical items and to relate this to their semantics. We will take the position here that an adequate reference dictionary must supply the syntactic and functional information which would be present in the lexical representations of major morphemes in a 'realistic' transformational grammar of the type described by Bresnan 1978. And to the extent that our knowledge permits us to do so, we will supply this information systematically in the dictionary entries which we develop.

Each entry must specify, in addition to the part of speech of the item, the syntactic environment in which the item occurs (i.e. its 'syntactic marker'), and, in the case of a predicator or other relational item, it must indicate how the argument positions in its functional structure are associated with the syntactic structure.

To exemplify what is required, let us consider the Warlpiri verb *panti-rni* (cited in the non-past tense to indicate its conjugation membership) as it is used in the following sentence:

- (1) *Ngarrka-ngku wawirri pantu-rnu (kurlarda-rlu).*  
 man-ERG kangaroo spear-PAST (spear-INST)  
 'The man speared the kangaroo (with a spear).'

The minimal syntactic marker of *panti-rni* in this usage may be stated by reference to the case array which it selects:

[    ERG,    ABS    ]

The verb takes two primary syntactic arguments, one in the ergative case (ERG), the other in the unmarked, or absolutive, case (ABS). Warlpiri does not utilize a fixed word order; accordingly, we formulate the case array as an unordered set. The grammatical relations borne by the syntactic arguments follow by general rule (cf. Hale, Jeanne, and Platero 1977) - the ergative bears the subject relation, and the absolutive bears the object relation. The case array can be enlarged by the inclusion of an optional instrumental expression (INST), which, like other 'semantic case' expressions, does not bear a primary grammatical relation to the verb - following common practice, we can say that it bears the 'oblique' relation. This expanded syntactic marker adequately portrays the syntax of *panti-rni* in the usage illustrated:

[    ERG,    ABS,    (INST)    ]

The verb is thereby correctly classified with others of the same syntactic type (such as *luwa-rni* 'shoot, hit with missile', *paka-rni* 'strike', and so on), and it is correctly distinguished from verbs belonging to other syntactic types (for example, *rdanpa-rni* 'to accompany', selecting the absolutive-dative case array: [ABS, DAT], *warri-rni* 'to seek, look for', selecting the ergative-dative array: [ERG, DAT], and so on). Clearly, this is essential information which must be included in the verbal entry in the dictionary of Warlpiri. And the corresponding information must, of course, be supplied in dictionary entries for the other languages involved in this project. To complete the task, however, we must indicate for each entry how the syntax relates to the semantics.

### 2.3 Semantic information

Consider the following very rough definition of the Warlpiri verb *panti-rni*, as it is used in sentence (1):

- (2) x produce indentation or puncture in y by moving pointed object into contact with y.

Ignoring for the moment the involvement of an instrument (a pointed object), this definition makes essential reference to two semantic arguments. One of these (designated x) corresponds to the traditional notion 'agent', while the other (designated y) corresponds to the traditional notion 'patient' - the agent, by some means or other, produces an effect upon the patient. Here, and quite generally for verbs of this semantic type, the x-argument in the semantic representation (the agent) is aligned with the ergative argument in the syntactic representation, and the y-argument (the patient) is aligned with the absolutive. This is in fact exemplified by sentence (1).

It is a traditional view that general principles exist according to which semantic and syntactic argument structures are aligned. That is to say, while it is recognized that the syntax of a lexical item, or some aspect of it, may occasionally be entirely idiosyncratic and not at all predictable from the meaning, it is recognized at the same time that there are general principles which apply without fail in literally thousands of cases - in fact, this assumption underlies the common lexicographic practice of leaving implicit the semantic-syntactic connection. But it is one of the tasks of linguistics to make this connection explicit and, where possible, to discover the general principles involved. Recent work in a variety of linguistic frameworks has contributed substantially to this effort (for example, Gruber 1965, 1976, Fillmore 1968, 1971a,b, Matthews 1968, Kiparsky & Kiparsky 1970, Zwicky 1971, Jackendoff 1972, 1976, 1978, Mel'čuk 1974, Anderson 1977, Carter 1976b, 1976-7, Ostler 1978, Perlmutter 1978, Dik 1978, Starosta 1978, among others), and we will take it to be a major responsibility of our work in this project to supply, where we have it, information contributing to the advancement of knowledge in this area of linguistic concern.

Assuming that it is correct to say that the semantic arguments of the Warlpiri verb *panti-rni*, in the meaning portrayed in (2), are an agent and a patient, and that they are aligned with the syntactic arguments as stated above, we might express the crucial information by means of a formula, such as (3) below, which states the syntactic and semantic argument structures and their alignment:

- (3) [ agent/ERG, patient/ABS, (instrument/INST) ]

This would be a parsimonious expression of the essential information. However, we will not attempt to use formulae of this sort in formulating dictionary entries for verbs, primarily because of the fact that, at our present level of understanding, such a formula as (3) is almost totally uninformative. Despite important advances in lexical semantics, we really do not know as yet how the semantic argument structure of predicators should be represented, or even the primary terms which should be involved in their representation (compare for example, Carter 1976a,b, 1976-7, and Jackendoff 1976, for quite different views on this). In short, we believe that dictionary work at this point should work toward, rather than presuppose, the maximally general expression of the syntactic-semantic alignment - the dictionary should be expansive rather than parsimonious in this area.

In conformity with this belief, we propose to utilize prosaic definitions of the type represented by (2) above, integrated with the syntactic marker in the following manner:

- (4) [ ERG, ABS, (INST) ] : x (ERG) produce indentation or puncture in y (ABS) by moving pointed object (optionally represented by INST) into contact with y.

In each instance, the definition will be garnered from the widest possible range of occurrences and from definitional commentary elicited from knowledgeable speakers of the language. In addition, it will be followed by a short list of the English words or expressions which figure most prominently in translating the item (such as, spear, stab, jab, poke), to be used in preparing the English-first lexical finder list, and, most importantly, example sentences attesting usage.

In constructing the definitions, and in choosing supporting attestations, we will have in mind the theoretical problem of ultimately developing a theory of syntactic-semantic alignment. We will also be concerned to provide information which will enter into the formulation of general lexical rules, such as, for example, those which in the case of Warlpiri *panti-rni* relate the usage embodied in (4) above to those embodied in (5) and (6) below:

- (5) [ ERG, ABS ] : pointed object x (ERG) produce indentation or puncture in y (ABS).  
(poke, pierce,...)
- (6) [ ERG, DAT, (INST), -rla(-jinta) ] : x (ERG) move pointed object (optionally represented by INST) in direction of y (implicature: contact not made).  
(poke at, jab at, stab at, throw spear at,...)

Quite generally, Warlpiri affective verbs which have an 'instrumental' reading like that in (4) also have a reading, like that in (5), in which the effect is produced 'directly' by an entity functioning alone, not manipulated by an independent agent. And where motion is involved in producing the effect, the verb typically has a third use - like that expressed in (6) - in which the focus is upon the motion and, by conversational implicature at least, the effect normally associated with the verb is unachieved. Often, as here, the different uses correlate with differences in syntactic marker. Although these relationships are recurrent in the lexicon of Warlpiri, we cannot as yet regard them as absolutely general, and therefore relegate them totally to the grammar; nor can we state them in other than a preliminary form. This comment applies analogously to the other languages of this project, of course. We maintain, therefore, that these lexical relationships are properly included in the dictionary as a part of the relevant entries. At this stage of our knowledge, the dictionary quite rightly serves as a data-base for research in these areas.

We have space here to survey only a small portion of the semantic information which must be included in lexical entries. Moreover, we have deliberately chosen a comparatively simple example to illustrate our general approach. Verbs whose syntax and semantics are more complex will involve proportionately greater complexity in their lexical entries - thus, for example, verbs like Warlpiri *ngarri-rni* 'to tell someone to ...', which take sentential arguments, will require a statement of their control properties (cf. Postal 1970, Chomsky (1973:257)), and so on. We have said nothing so far about nominals, the other principal part of speech in Pama-Nyungan languages. While most nominals function primarily in the argument role, a great many function primarily in the predicate role (for example, Warlpiri *ngampurrpa* 'desirous, wanting', *pina* 'knowledgeable, knowing') and, accordingly, have argument structures quite comparable to those of verbs. Many nominals have meanings which can be properly understood only by reference to their position within a semantic paradigm or domain, such as, the kinship system, of special importance, and complexity, in Australian Aboriginal societies. And in general, for the vocabulary at large, it is important in a dictionary to indicate semantic relations among words. Some of these relations play important roles in Australian culture, for example, antonymy (cf. Hale 1971), hyperonymy, hyponymy and synonymy (cf. Dixon 1971). Where we possess relevant information concerning these relations, we will include it in our dictionary entries (except where it would violate a proscription, set by the speakers of the language involved, against the public revelation of sacred material (cf. introductory comments in Hale 1971)).

For further indication of the nature of semantic information which we hope to include, see the preliminary sample entries in 3 and 4 below. We turn now to a brief consideration of the remaining rubrics to be included.

#### 2.4 Derivational information

The formal aspects of productive derivational morphology will, as a matter of course, be detailed in the grammar. There is a distinction to be drawn between derivation effected by rules of the phrase structure (cf. Jackendoff (1977, Ch. 9)) and derivation effected by rules which can properly be said to belong to the lexicon (cf. Aronoff 1976). To the first category belongs, for

example, the absolutely general principle of nominalization - defined over a phrasal category, not over lexical items - giving rise to the tenseless ('infinitival') desentential complements of Warlpiri, Warlmanpa, and the Arandic languages. To the second category belongs, for example, the productive process by which inchoative and causative verbs are derived from nominal bases in the majority of Pama-Nyungan languages. Our dictionary entries will be concerned primarily with the latter category in that they will include information concerning aspects of lexical derivation which are idiosyncratic, such as derivational processes specific to particular lexical items, and item-specific semantic or syntactic behaviour deviating from otherwise general rules of lexical derivation. It will be an important task of the grammar and dictionary together to give an accurate picture of the relative productivity of individual derivational processes. In this general area of concern, an especially interesting derivational system is represented by the rich inventory of preverbs in Warlpiri and Warlmanpa (and closely related languages). The morphologically bound (or semi-bound), but semantically and phonologically root-like preverbal elements constitute an extremely important lexical resource, rivaling in abundance the verbal and nominal parts of speech. Accordingly, they will be an important focus of attention in our work.

A traditionally problematic case is represented by certain detransitivizing processes, such as the passive-reflexive of Lardil (cf. Klokeid 1976) and the passive of Ngarluma (cf. O'Grady, Voegelin & Voegelin (1966:101), and Wurm (1972:62)). The syntactic structures of passive (-reflexive) sentences is provided by rules of phrase structure, but the passive (-reflexive) morphology is strictly verbal and is, moreover, restricted to a subcategory of verbs. The active-passive relation in these languages is similar in nature to the relation between syntactic-semantic markers (such as (4) and (5)) discussed above in connection with the Warlpiri verb *panti-rni*, and the question of whether the active-passive relation is effected by means of a syntactic transformation is open, no less in these languages than in, say, English (cf. Freidin 1975, Wasow 1977, Bresnan 1978, and much other literature). There are Lardil and Ngarluma passives which, unquestionably, must be entered in the lexicon, by virtue of morphological irregularity, semantic specialization, syntactic deviance, or the like. But we will take a general lexicalist position and enter, for every verb, information concerning its ability to take a passive form. Here again, we assume that the dictionary should serve as a data-base for the eventual formulation of general principles.

## 2.5 Dialectal and contextual information

Our dictionary of Arandic will be explicitly comparative, since it deals with a language-dialect complex. But in the case of single languages, too, we will present dialectal information if we have it. This will be especially important for Warlpiri, since it is spoken over an enormous area and exhibits noticeable intralanguage variability. The dialect picture in Warlpiri is not clear, however, and we will assume that the dictionary should include information contributing to its eventual clarification. Our lexical data come from all of the major centres of Warlpiri concentration, and we propose to indicate the provenience of our recordings for every item, as a part of its dictionary entry. In the grammar, likewise, we will indicate the source of forms which appear to represent local usage. This will be of considerable value in future studies of lexical and grammatical diffusion (in the tradition recently initiated by Heath 1978, for example).



By 'contextual information' we mean socio-cultural factors involved in the use of lexical items such as 'in-law' or avoidance vocabulary (cf. Dixon 1971), auxiliary vocabularies used under conditions of restriction on ordinary speech (cf. Hale (1973b:442-445), and 1982b), and the widely reported taboo on the use of lexical items resembling, or incorporating, the names of the deceased (cf. Dixon 1970 for some discussion). Where it is known, the status of dictionary items in relation to these factors will be included. Thus, for example, in Warlpiri the onomastic restriction just mentioned is, in part at least, responsible for the existence of large synonym-sets for certain concepts (for example, *yankirri*, *karlaya*, *karnanganja*, *kuna-maju*, *wanya-parnta*, *pirilyi-nga-rnu* 'emu'). It is not satisfactory simply to list these as synonyms, without comment (as is done, for instance, in Hansen & Hansen 1974, for Pintupi). Some indication must be made of the relative currency of synonymous terms; some are rarely used, while others can be said to be current and in general use.

## 2.6 Etymological and historiographic information

Where possible, in the interests of comparative and diffusional studies, lexical items will be supplied with an indication of their occurrence elsewhere in Australia, either by citing a reconstruction (using, say, the asterisk notation of O'Grady 1966, to reflect relative historical depth) or, where a reconstruction cannot be offered, by citing other languages in which the form has been recorded. An indication of the likelihood of borrowing will also be made, certainly in the case of loans from English, but also for loans from neighbouring Australian languages where we have reason to suspect borrowing.

Historiographic documentation of dictionary entries refers here primarily to the citation of earlier linguistic and ethnographic literature in which the items are mentioned, particularly where it is discussed at some length. Such references are extremely valuable, since they often supply cultural and general onomasiological information which we ourselves do not possess or, for reasons of length, cannot include in the entry, see, for example, Tindale's excellent remarks on the Lardil territorial term *nyedwe* 'place, territory' (spelled *jaruwe(i)* by him, Tindale (1974:18-19, 21)), and Strehlow's masterful essay on the Arandic concept *tjurrunga* 'sacred entity' (*tjurunga*, Strehlow (1968:84-86, et passim)).

## 3. WARLPIRI

### 3.1 Location, speakers, previous documentation

The Warlpiri-speaking area currently embraces approximately one eighth of the Northern Territory. It is located in the west of the Northern Territory and extends a short distance into Western Australia at points roughly mid-way along the north-south course of the common border. A somewhat more restricted traditional tribal area is described in Tindale (1974:236), and an exact delimitation of the territory has been made in connection with the recent successful land rights hearings. Major concentrations of Warlpiri people are

at Yuendumu, Willowra, Hooker Creek, Warrabri and Papunya. The number of Warlpiri speakers is set at 2712 by Milliken 1976, but this is probably a low figure and certainly does not include the many fluent speakers who do not regard their tribal affiliation as Warlpiri.

Our spelling of the tribal name is that now employed in the Yuendumu Bilingual Education Program, but there are other spellings, the commonest being Walbiri. The Warlpiri are also known by other names, the commonest of these being Ngaliya (the name predominating in the extreme south of the area, for example, at Papunya). Literature on the Warlpiri people is fairly extensive, including an excellent ethnography by Meggitt 1962 and a number of linguistic works. The latter include a brief grammatical sketch by Capell 1962 and an informative ethnolinguistic essay by the same author (Capell 1953), a study of Warlpiri phonology by Jagst 1975, and a grammar and dictionary by Reece 1970, 1975. Several papers on specific topics in Warlpiri grammar have also appeared, or will soon appear (for example, Hale 1973a, 1976a, Laughren 1978, 1982, Nash 1980), and a large number of unpublished works exist (for example, Hale 1959, 1967-8, 1969, 1974, 1982a, Carrier 1976, Granites 1976, Laughren 1977). In addition, the bilingual education personnel at Yuendumu and Willowra have been producing elementary reading materials at a steady rate over the past five years (with some 50 primers, and many workbooks, as of August, 1978); and recently, a bilingual news bulletin, *Junga Yimi* (the true word), has begun to appear. Despite all of this documentation, we do not yet have a grammar or a dictionary which is at all commensurate with the status of Warlpiri as one of the most vital languages in Aboriginal Australia. The work currently being done at Yuendumu on a monolingual dictionary and the work of the project here proposed will hopefully correct this situation.

### 3.2 Core of data for the dictionary project

The material which forms the core of our Warlpiri data-base was assembled in the following manner. During 1959, Hale spent approximately six months working with speakers of Warlpiri preparing a general survey of the vocabulary, with emphasis on semantic domains which are especially elaborated in Australian languages. This was done not only for the purposes of documenting the Warlpiri language, but also to serve as a model, or guide, for the study of other Australian languages during a two-year field trip (sponsored by NSF, fellowship No. 40858, 1959-61). Grammatical studies of Warlpiri were also conducted at this time, but the primary interest was in exploring the lexical resources of the language. The results of this lexical study were assembled in a manuscript entitled *Introduction to Wailbry (sic) Domains and Selection (IWDS)*, along lines closely parallel to the Voegelin's study of Hopi vocabulary (Voegelin & Voegelin 1957), and comparable to that work in size (approximately 1,500 items) and coverage. This resource was utilized extensively in subsequent work on other Australian languages, as well as in further work on Warlpiri.

During a second field trip to Australia (sponsored by NSF, Grant No. GS-1127, 1966-67), Hale was concerned both with the study of aspects of Warlpiri grammar and with further work on the lexicon, particularly in relation to the light that the latter might shed on the grammar. In the course of this work, several gifted speakers of Warlpiri were asked to compose oral essays (on tape) on the meanings and onomasiology of individual lexical items appearing in



*IWDS*. This resulted in a sizable increase in lexical inventory, because the essays themselves introduced many new items. Most important, however, it provided an extensive body of textual material containing not only extremely valuable commentary on the meanings of words and their uses, but also much contextual information of great relevance to our concerns in this project. Transcriptions of tapes made in 1966-67 have so far yielded 2,000 foolscap-size pages of data. Many tapes remain only partially transcribed, that is, those portions not understood by Hale at the time the tapes were made were written down, glossed, and in some cases resubmitted for commentary, but the rest was left for later transcription. It is estimated that these, when fully transcribed will yield at least another 2,000 pages of data. In addition, we possess approximately 2,000 more pages of material on a variety of topics from the field trips, from a month-long visit to Yuendumu by Hale in 1974, and from a six-week visit to MIT by Robin Japanangka Granites in December-January, 1975-76. These latter include conversations, lesson materials, grammatical eliciting, songs with spoken commentary, personal anecdotes and adventures, and other narratives. To this core of data must be added a large amount of material which has been collected at Yuendumu by Mary Laughren.

### 3.3 Sample dictionary entry

We do not have a final format for our dictionary entries. Consequently, this presentation will take the form of a brief, and very preliminary, discussion of various items of information which will be included in the entry for a particular Walpiri verb, namely the verb *yirra-rni* 'put, place, ...'. For an example of a nominal entry, see 4 below on Warlmanpa.

#### 3.3.1 Morphophonological information

By citing the verb in its non-past form, hyphenated to display the inflection, we effectively identify its morphophonemic subclass, or 'conjugation'. Disyllabic (or longer) verbs taking the non-past ending *-rni* belong to the 'second conjugation' (according to the usage in Hale, 1959, 1969, 1974), and *yirra-rni* is a perfectly regular member of that subclass. The grammar, of course, will detail the allomorphy exhibited by the inflectional and derivational morphology of regular second conjugation verbs.

The entry is written in the orthography adopted for use in the Yuendumu Bilingual Education Programme. With some exceptions (not involved here, but to be detailed in the phonological section of the grammar and in relevant dictionary entries), representation in that orthography permits unambiguous recovery of the underlying phonological representation.

## 3.3.2 Syntactic and semantic information

The form of the entry itself indicates that *yirra-rni* is a verb, since only verbs are inflected for tense and participate in the conjugation system. The diathesis of the verb will, of course, be embodied in the syntactic marker and semantic representation associated with each of its uses. A basic use of *yirra-rni* may be formulated very tentatively as follows:

- (7) [ ERG, ABS, ALL/LOC ] : x (ERG) cause y (ABS) to be in place z (ALL/LOC) by moving y to z.

This is, we repeat, a very tentative formulation. With the exception of the notation ALL/LOC, the intent of (7) should be relatively clear from our remarks at 2.3. By the expression 'z (ALL/LOC)' we mean that a nominal denoting the destination or ultimate resting place (z) of the entity moved (y) may appear in the allative case or in the locative case, freely. The meanings of the semantic cases themselves will be discussed thoroughly in the grammar.

To complete our account of this use of *yirra-rni*, we include English glosses and examples of usage:

(put, place, position, locate, ...)

- (a) *Karntangku kartaku yirrarnu warlukurra.* The woman put the billycan on the fire. (b) *Nyarrpararla yirrarnu tiraki Japanangkarku?* Where did Japanangka put the truck? ...

A second use of this verb may be set out as follows:

- (8) [ ERG, ABS, LOC ] : x (ERG) cause y (ABS) to be in place z(LOC) by creating y in place z.

(put, make, build, paint, draw, ...)

- (a) *Kurdukurdurlu kalu kuruwarri yirrarni walyangka.* The children are making (e.g. drawing, painting) designs on the ground. (b) *Nyampurla kapili ngarrkangkku yunta yirrarni.* The men are going to put a windbreak here. ...

To be sure, the two uses which we have distinguished here are intimately related. But we wish to adhere to a conservative practice in cases of this sort by granting separate status to distinguishable but related uses. We cannot hope to be totally consistent in this, since our knowledge is limited. But we wish to avoid, to the extent we are able, undue influence from the English glosses we know to be appropriate. It is doubtless significant that both of the above uses are adequately rendered by the single English verb 'put', this in itself surely says something significant about the core meanings of English 'put' and Warlpiri *yirra-rni*. But it is also significant that Navajo, for example, renders the two senses in utterly distinct manners; the first by means of the famous classificatory verbs of 'handling', the second by means of various verbs of 'creating' or 'making'. We do not wish to be excessively anticipatory in our generalisations over observed uses. Our purpose, above all, is to provide information upon which an improved characterisation of lexical meanings can ultimately be made.

The following use of *yirra-rni*, while semantically related to the first, involves a somewhat different semantic marker and more narrow selection:

- (9) [ ERG, ABS, DAT ] : x (ERG) cause article of clothing y (ABS) to be on z (DAT), normally a person, in the manner appropriate to y, by moving y onto z.

(put on, don (in reflexive), ...)

(a) *Japanangkarlu karla kurduku jati yirrarni*. Japanangka is putting a shirt on the child. (b) *Mukardinyanu yirrarnu purllangkku*. The old man put on his hat.

The grammar will explain that the dative argument, here and in general (sense permitting), can be represented by the reflexive, as in (9(b)).

Related to the use shown in (8) above is the following, also with altered syntactic marker and more discriminate selection:

- (10) [ ERG, ABS, DAT ] : x (ERG) cause decorative marking y (ABS) to be on surface of discrete entity z (DAT) (artifact, person) by creating y on surface of z.

(put, draw, paint, cut, carve, ...)

(a) *Yapangu karlurla nyampuwaringkirli kiri yirrarni karliki*. People of this area put (carve) fluting (*kiri*) on boomerangs. (b) *Kurawarri kapalanyanu yirrarni kurdujarrarlul*. The two children are putting marks on themselves (or on each other).

This does not exhaust the uses of *yirra-rni* known to us, but it should suffice to illustrate the general character of the definitional and syntactic portions of our verbal entries.

Much work remains to be done in perfecting the definitions so that they are at once accurate and informative. It goes without saying, of course, that we must explain the practices we have adopted in formulating definitions. This will be done in a general expository essay attached to the dictionary. Among other things, we will be concerned there to clarify our semi-formal metalinguistic use of certain English expressions such as predicates like 'cause', 'go', 'be', 'move', 'produce', 'manipulate physically'; relational terms like 'in', 'on', 'to', 'onto'; and substantival expressions like 'place', 'discrete entity', and so on. We will also describe our practice with regard to details of selection and our usage in cases where encyclopaedic knowledge is alluded to such as our use of expressions like 'in the manner appropriate to x', 'characteristic of x', and the like. Most important, we will attempt in the general essay to justify certain claims which are implicit in our definitions, such as our bipartite formulation of the use in (7) above so as to include an 'effect' component (x cause y to be ...) and a 'means' component (x move y ..., by moving y).

### 3.3.3 Additional semantic information

In addition to strictly definitional information, the semantic relation of each item to certain others will be included, particularly where this will lend support to a proposed definition. In the present instance, it will be pointed out that Warlpiri *yirra-rni*, in the use given in (7) above, but not in the other uses, is a *hyponym* of certain other verbs of physical transfer. For example, *yirrpi-rni* 'to insert, put in, ...' has the syntactic marker indicated for (7), and it differs semantically from that use only in that the destination of *y* is specifically the interior of *z*. By contrast, *yirra-rni* itself leaves the exact spatial orientation of *y* with respect to *z* indeterminate, allowing any orientation appropriately rendered by the allative and locative cases. The verb *yirrpi-rni* is a true hyponym of *yirra-rni*, the latter can always replace the former, preserving truth, but not conversely. Certain derivatives of *yirra-rni*, to be discussed briefly in the next subsection, are also hyponyms of it.

Many pairs of lexical items have overlapping uses. That is to say, there are uses in which one lexical item may appropriately paraphrase another, although the total range of uses of the two are distinct. Where we have information of such paraphrase relationships, they will be given, at one entry or the other. In the case at hand, it will be pointed out, for example, that the verb *kiji-rni*, whose principal meaning corresponds approximately to that covered by the English glosses 'throw, drop', is also used as a verb of physical transfer substitutable for *yirra-rni* in uses given in (7) and (9). Most interesting, however, is the fact that *kiji-rni* can paraphrase *yirra-rni* in the 'creative' senses embodied in uses (8) and (10), thereby providing valuable evidence for the intimate relationship among these various uses.

### 3.3.4 Derivational Information

In the following subsections, we discuss three sorts of derivational morphology into which the Warlpiri verb *yirra-rni* enters. The discussion is meant simply to be representative of issues which will arise frequently in the construction of Warlpiri dictionary entries. It is not an exhaustive treatment of *yirra-rni*. We omit from this discussion ostensibly idiomatic combinations (such as *waninja-yirra-rni* 'to fall in love with'), though these will, of course, be included in the actual dictionary.

#### 3.3.4.1 Derived causatives, *yirra-rni* as a causative auxiliary

There is a closed and semantically coherent set of causative expressions formed by prefixing to *yirra-rni* the infinitive (V-INF) of the basic verbs of stance. These latter are *nyina-mi* 'to sit', *karri-mi* 'to stand', *nguna-mi* 'to lie' and *parntarri-mi* 'to crouch, be in a humped-up stance'. The resulting combinations take the form V-INF-*yirra-rni*, and one of their most basic uses may be expressed as follows (jointly for all):

*V-INF-yirra-rni*

[ ERG, ABS ] : x (ERG) cause y (ABS) to assume the stance depicted by V by physically manipulating y.

(put in sitting position, ...)

These derived verbs can also partake of the use given in (7) above, with added specification of the stance of y in place z:

[ ERG, ABS, ALL/LOC ] : x (ERG) cause y (ABS) to be in place z (ALL/LOC) by moving y to z, in such a way that y, in place z, is in the stance depicted by V.

(set, stand, lay, ...)

In this uses, these derived causatives are hyponyms of the simple verb *yirra-rni*.

Since this particular derivational process is specific to *yirra-rni*, it will be detailed in the entry for that verb. At the entries for the relevant stance verbs, however, there will be a reference to the derived causatives together with directions to the full discussion.

## 3.3.4.2 Preverbs

Like most basic verbal elements in Warlpiri, *yirra-rni* combines with a number of preverbs, most of which leave the syntactic marker and definition of use (7) intact, but with some added specification. Some of the preverbs of this types are *wuruly-* 'seclusion', *waraly-* 'suspension', *juka-* 'upward protrusion'. Thus for example we have:

*wuruly-yirra-rni*

[ ERG, ABS, ALL/LOC ] : x (ERG) cause y (ABS) to be in place z (ALL/LOC) by moving y to z, in such a way that y, in place z, is secluded, not in view of others.

(hide, seclude, 'plant', ...)

Some preverbs, however, combine with *yirra-rni* in an idiosyncratic manner both from the point of view of the syntactic marker, and from the point of view of the definition. In some cases, the preverb is unique to the combination. For instance, while the primary use of *parnta-yirra-rni* is clearly related to use (9) above, the form is essentially a unique combination and cannot be predicted on any general grounds:

*parnta-yirra-rni*

[ ERG, ABS, DAT ] : x (ERG) cause blanket or other flexible covering y (ABS) to be on z (DAT) such as prone person, in the manner characteristic of y, by moving y onto z.

(put blanket over, cover with blanket, ...)

Roughly speaking, there are three types of preverbs in Warlpiri. One type combines with verbs in an absolutely productive manner, there being no verbs whatsoever which cannot host them. Typically, the semantics of these absolutely productive preverbs are related to factors external to the definition of the verb; the preverbs, therefore, are not restricted in their occurrence to verbs of specific semantic subtypes. Thus, for example, the quantifier preverbs *muku-* 'all, completely', *puta-* 'some, partially', *jarnku-* 'each, separately', *yarda-* 'another, more, again', and so on, relate to the meanings of the nominal expressions in a sentence, or to the aspectual frame of a sentence, not to the meaning of the host verb itself. Thus, it is always possible to arrange matters so that a given verb hosts one of these preverbs. It would almost certainly be a mistake to regard a combination like *yarda-yirra-rni* 'put another, put more, put again' as a lexical item in the usual sense. The existence of this combination is assured by an absolutely general principle of word formation, and its syntax and semantics can be stated in completely general terms. Preverbs of this general category will be entered in the dictionary as separate entries, together with a statement of the general rules pertaining to them and ample exemplification.

At the opposite extreme in the productivity scale are preverbal elements, like *parnta-* exemplified above, which occur only in unique, or extremely limited, combinations. At the entries of verbs which host them, these nonproductive preverbs will be listed, but the combination as a whole will head its own separate entry and will be fully treated there.

Much more interesting are the many preverbs of an intermediate sort, exemplified by *wuruly-* above. Semantically, these typically relate internally to the meaning of the host verb; they have readily discernable semantic content which modifies that of the host verb in ways which appear to be quite regular. And they are partially productive, in the sense that they combine relatively freely with verbs possessing specific semantic properties. Thus, for example, *wuruly-* combines with transitive and intransitive verbs of location (that is, verbs whose definitions, in the preliminary form given by us, contain the expression 'in place z'), adding to their meaning the 'manner' qualification which we have tentatively rendered 'in such a way that y, in place z, is secluded, not in view of others'. Preverbs of this general type will be entered in the dictionary in two ways. First, each will be accorded a separate entry at which its general properties will be stated; it will be exemplified minimally, but a list of known host verbs will be given. Second, at the entry of each host verb, the combination will be treated in full. Thus, at the entry for *yirra-rni*, the combination *wuruly-yirra-rni* will be treated. Since the definition of this combination conforms to a general rule, it can be given in a greatly abbreviated manner. It will be sufficient to say in this case that the meaning of the preverb ('in such a way that ...') is simply appended to the definition embodied in (7) of the host verb, with the variables linked in the proper way, of course ('... y, in place z, ...'). Nothing at all need be said about the syntactic marker, since that remains unchanged. In

general, for preverbs of this sort, we take a conservative position and include in the dictionary the specific detail, as well as the general rule. This is in conformity with our general view that the dictionary should serve as a data-base for research on general principles operating in the lexicon.

### 3.3.4.3 Deverbative nomic nominals

There exists in Warlpiri a suffix added to verb stems to form 'nomic' or 'generic' nouns. The suffix appears in the same position relative to the stem as do the tense endings, and like the latter, it varies in shape according to the conjugation membership of the verb. With second conjugation verbs, the form is *-rnu*, homophonous with the past tense, in fact. A noun thus formed typically appears as the second member of compound with another noun, corresponding to an argument of the verb. Most frequently, the verb is transitive, and the preposed noun stands in the object relation to it, for example, *yapa* 'person' plus *nga-rnu* 'eater' gives *yapa-nga-rnu* 'cannibal'; *kuyu* 'meated animal, game' plus *pu-ngu* 'killer' gives *kuyu-pu-ngu* 'game-killer, good hunter'; and so on. In general, the meaning of such a nomic nominal can be characterised in the following terms:

Entity of which the activity depicted in the combination N-V (where N is direct object of V) is appropriately predicated or is a characteristic property.

The formation of nomic nominal expressions of this sort is quite free in Warlpiri, and they are often coined spontaneously, for example *jungunypa-ma-nu* 'mouse catcher' coined in 1966 to refer to a biologist doing field work for a short period in the Yuendumu area. But many nomics are well established and must be considered lexical items in their own right.

Nomic nominalisation provides a rich source for the development of technical vocabulary in Warlpiri. Recently, the process has been used to create technical terms in linguistics. One such term, reported by Alpher 1976, involves the verb *yirra-rni*. The term is *yintirdi-yirra-rnu* 'stem formative'. It consists of the noun *yintirdi* 'stem of word' (a semantic extension from the senses 'stem of plant, trunk of tree, ...') preposed to the deverbative noun *yirra-rnu* 'maker' (based upon the use of the verb *yirra-rni* given in (8) above).

### 3.3.5 Dialectal and contextual information

This verb, so far as we know, is universal in the Warlpiri-speaking area, having been recorded from speakers representing all the major centres of Warlpiri concentration.

There is, however, one use of the verb which was recorded only in the east in the Hanson River region. The use may be formulated as follows:



[ ERG, ABS ] : cold wind/weather x (ERG) cause y (ABS) to suffer, feel discomfort.

as in:

*Pirriyarlu kaji yirrarni.* The cold is causing me to suffer. I am cold.

This meaning is normally rendered in Warlpiri by means of the general verb of damage and harmful effect *pi-nyi* 'to damage, harm, hit, kill' or by one of the selectionally more restricted verbs *kaaly-pi-nyi*, *karlpi-mi* 'to cause to suffer - said of cold wind or weather'.

No special contextual information need be given for *yirra-rni*. A few Warlpiri verbs have special *yikirrinji*, or 'avoidance', replacements for use in speech acts which involve (as addressee or referent) a kinsman to whom the speaker must behave in an indirect and respectful manner. For most verbs, however, including *yirra-rni*, a general umbrella *yikirrinji* verb is used (*miti-pi-nyi*, *marrarl-ya-ni*, or *ngarri-jarri-mi*, depending upon the kinsman involved; cf. Hale 1959).

### 3.3.6 Etymological information

Warlpiri *yirra-rni* is possibly related etymologically to the causative form reconstructable as \*\*\**nyirra-l* 'to put, set', which is in turn related to the stance verb \*\*\**nyina-Ø* 'to sit' (cf. Warumungu *nyirri-l*, *nyin-*; Arandic \**arri(-rni)-*, \**ani-*). If so, the verb continues a tradition of considerable antiquity, since the causative formation, while nowhere an active process synchronically, is at least assignable to Pama-Nyungan, being attested vestigially in widely separate members of the family. The reconstruction would warrant three asterisks in O'Grady's notation (O'Grady (1966:110-112)). However, the *y-ny* correspondence in the initial consonant, while not unprecedented (cf. *yilima*, *nyilima* 'liver', within Warlpiri itself), is highly irregular, and the etymology suggested here may well be false. Generally in cases like this, initial *y* in a Warlpiri form earmarks a loan from the predominantly vowel-initial Arandic languages, and it is at least remotely possible that Warlpiri *yirra-rni* is not a continuation of \*\*\**nyirra-l* but rather a borrowing from one of the neighbouring Arandic forms. Against this is the vocalism of the Warlpiri form.

## 4. WARLMANPA

### 4.1 Location, speakers, previous documentation

Traditionally the Warlmanpa occupied an area immediately to the northeast of the Warlpiri. Tindale (1974:236) does not accord them separate tribal status, and includes their name as an alternate of Warlpiri. The only published maps which indicate the Warlmanpa are Meggitt's 1962 (which does not delineate their territory, but puts them as northeast neighbours of the



Warlpiri between the Warumungu and the Djingili) and O'Grady, Wurm and Hale's language map 1966 (which places them too far to the west). The only other information on their location is in a map in McConvell 1981 which, consistent with Meggit, places them in an area centered about 30 miles west of Banka Banka homestead, and extending northwards to Lake Woods. Capell (1962:44) notes "Rennie's (sic. Renner) Creek and Banka Banka districts" as being Warlmanpa territory. All this is in turn consistent with what Nash was told of the location of traditional Warlmanpa territory during his field work. A more exact appreciation of the extent of traditional Warlmanpa country was gained in the Warlmanpa, Warlpiri, Warumungu and Mudbura traditional land claim, heard in late 1980.

The remaining Warlmanpa speakers are few, amounting to a handful of (extended) families. They reside primarily at Tennant Creek, Ali-Curung (Warrabri) and Banka Banka (including its outstation at Jinarinji). Others, perhaps a few dozen, know a good deal of the language but are more at home in one or more other Australian languages - these people live at the above-mentioned places and also at Elliott. The number of Warlmanpa speakers is set at 36 by Milliken 1976, but this figure is based more on volunteered tribal affiliation than on the languages commanded by the individual, and is liable to be an under-estimate. On the other hand, people who regard themselves as Warlmanpa all use another language, whether Warlpiri or Warumungu, or English for a large proportion of their daily life, so the language is under threat and no-one under the age of 30 has much command of it, as far as we know.

Our spelling of the name is that which conforms with the orthography now used to record the language, and is taken from the Yuendumu Bilingual Education Programme's model. Previous spellings have been Walmamba, Walmanba and Warlmanba. An alternate pronunciation, favoured by speakers whose first language does not allow lateral plus nasal clusters (for example Warlpiri), is Warnmanpa.

Warlmanpa has been mentioned, even in passing, only a handful of times in the literature. It is listed in the surveys of O'Grady, Voegelin & Voegelin 1966, and Wurm 1971, 1972; and mentioned in Meggit 1966, Chakravarti 1967 and McConvell 1980. The published literature is confined to asides in Capell 1953, 1962 (see the following section) and Hale (1973a: 231 n. 17, 1973b: 453 n. 56). The only other mentions in print of the name are in government documents, including the one published as Milliken 1976.

#### 4.2 Core of data for the dictionary project

The data available from Capell consists of a 20-word list and a 9-line text (reprinted from Capell (1953:112, 129)), a list of the basic forms of the pronouns and 6 simple sentences, in Capell (1962:45-47). Aside from this, the material consists only of field notes and recordings made by Hale and David Nash.

Hale's material consists of 101 pages of handwritten data, collected from Lofty Japaljarri of Powell Creek (27pp.), Jack Jangala Walker at Warrabri (3pp.), and Donald Jupurrula Graham ("Spencer", sc. Pencil) at Tennant Creek in 1966 (61pp.). This last corresponds to two 1-hour tape recordings. Written

analysis consists of a handwritten 5-page list of the person-number clitics (compared with Gurindji and Njininj) and half a page of verbal morphology. This data-base was extended during the 1977-78 field trip made by Nash. The additional material is on 25 1-hour tapes (not including 3 tapes of songs), which are still being transcribed, and the equivalent of about 20 pages of notes (vocabulary and grammatical investigation) that were not taped. Hale's *IWDS* was used for elicitation in a number of domains, as were sections of his Warumungu Notes, and Warlpiri grammatical excerpts.

The working Warlmanpa card index currently numbers around 220 verbs and 600 nominals. This does not include a further 110 place-names, nor most of the roughly 200 Warlmanpa flora terms collected by Nash. The remaining transcription and excerption will yield approximately two hundred more items. For a preliminary vocabulary and grammatical sketch see Nash 1979.

#### 4.3 Sample dictionary entry

This presentation is a brief and preliminary discussion of various items of information which will be included in the Warlmanpa dictionary entry for the noun *ngapa* 'water, rain, ...'.

##### 4.3.1 Morphological information

By citing the word unmarked as to category we effectively identify it as a nominal, for verbs appear hyphenated with their conjugation marker; and minor categories such as particle will be explicitly labelled. The grammar will detail the allomorphy exhibited by the inflectional and derivational morphology of a regular disyllabic nominal, for example, the widespread Pama-Nyungan ergative-locative allomorphy, conditioned by syllable count (cf. Hale, 1976b).

The entry is written in the orthography used for Warlpiri in the Yuendumu Bilingual Education Programme. The recovery of the underlying phonological representation is as straightforward as for Warlpiri, with perhaps one complication. This has to do with an apparent fortis/lenis distinction in intervocalic stops in Warlmanpa, primarily in disyllabic roots. This distinction is largely predictable in such roots, and the rules for it will be indicated diacritically. Suffice it to note here that *ngapa* contains a fortis stop, that is, *nga[p:]a*.

## 4.3.2 Syntactic and semantic information

The form of the entry, as we have noted, indicates that *ngapa* is a noun, and, therefore, inflects for the various cases. The meanings of *ngapa* include:

1. water - the liquid:
  - (a) *Ngaparna nganmi*. I'll drink the water.
  - (b) *Kalyarripakarnu ngapa wiri; yiwirtika yiwirtika panangurra*. He swam the flood (lit. big water) from tree to tree.
2. ice
  - (a) *Parrangu jinya ngapa*. The sun is melting (lit. burning) the ice.
3. rain
  - (a) *Ngapa wanma*. It might rain.
  - (b) *Ngapaju ngayuku waluka pilywanu*. The raindrop hit my head.
4. liquid, for example, juice of fruit
  - (a) *Yarnunju yimpa ngapajila*. This fruit is juice-less.
5. water source
  - (a) *Ngapangarnalu jartakangu*. We slept at the water hole.

## 4.3.3 Additional semantic information

The meanings of Warlmanpa *ngapa* overlap with those of a number of other items. Thus, for example, a common use of *pirraku* is a hyponym of *ngapa*:

*pirraku* 1. 'thirsty', 2. 'potable water'

There is evidence that the first meaning is basic, but the second meaning is very well-documented, not only for Warlmanpa, but for its Warlpiri cognate *puraku* - *pirraku* as well. Other hyponyms of *ngapa* are *paawani* 'flood water, moving surface water'; *wilpa* 1. 'river, creek', 2. 'creek water'; *ngulya* 1. 'hole', 2. 'burrow', 3. 'soak, water-well', 4. 'water from soak'; *pali* 1. 'rock-hole', 2. 'water from rock-hole'. All of these words have a meaning hyponymous to the first of the meanings listed under *ngapa*. As will be evident from the dictionary as a whole, the conflation of potential and actual ('water, well', 'fire, wood') is a recurrent theme in the semantics of nominals. This is true not only in Warlmanpa, but in the Australian languages generally (cf. O'Grady 1960).

Related to the third sense of *ngapa*, that is, 'rain', we have the opportunity to record information of a mythological nature, since rain (like many other phenomena) figures prominently in Australian totemic theory. The mythological character, whose name has been rendered 'Rain Dreaming' in English, is appropriately referred to by the term *ngapa*, as in:

*Ngapangu parninyangu pulkama, lanilku, jutpungu*.  
Rain smelled the old man, who was afraid and ran.

## 4.3.4 Derivational information

Like most nouns capable of denoting places, *ngapa* can combine with the suffix *-wartingi* 'denizen of': hence *ngapa-wartingi* 'water-dweller'.

This noun also combines with the extremely productive noun-forming propriative and privative suffixes (cf. Dixon (1976: 203-310)), thus *ngapa-parna* 'having water, bearing rain (as cloud)'; *ngapa-jila* 'waterless, without water, no rain, arid'.

## 4.3.5 Dialectal and contextual information

Given the small number of speakers of Warlmanpa, and the fact that it is currently used only by a few families, information on dialectal variation is sparse. There are respects in which the speech of the present speakers differ, but it may be that such differences are attributable to influences from other languages that they know. In any case, since we do not have all the knowledge needed to control for such interlanguage influence, we will take the conservative approach, as adopted elsewhere in the project, of listing the information as we have it as to variation among speakers that we have recorded. Usually a Warlmanpa entry will bear no dialectal or contextual comment, and this is to be interpreted as indicating that the item is not restricted in dialect or style.

## 4.3.6 Etymological and historical information

In this section it will be noted that *ngapa* is widespread in the western area of the Pama-Nyungan territory. It occurs, for example, in the neighbouring Warumungu *ngappa* and Warlpiri *ngapa*.

Historiographic comment for this entry would mention the occurrence of *ngapa* in Capell's wordlist (1962:45), - *ṇaba* in his orthography - and furthermore its occurrence in Capell's text (1962:47) where it signifies a mythological being in the sentence given in 4.3.3 above (here repeated in Capell's orthography):

*ṇabaṇu baṇinjaṇu bulgama lanilgu djudbunu.*

Lightning smelled the-old-man (who) was-afraid (and) ran.

extracted from an account of Palyupalyu, the blue-tongued lizard. This Dreaming narrative has been retold to Nash.

## 5. NGARLUMA

The traditional Ngarluma territory, in the vicinity of the Western Australian town of Roebourne, was bounded on the north by the Indian Ocean, on the south by the tablelands some 50 miles inland, and on the east and west by the Peeawah and Maitland rivers, respectively (cf. von Brandenstein 1970, Hall 1971; and also Tindale 1974, who gives a similar delimitation of the traditional territory). The number of Ngarluma speakers was estimated to be approximately 71 in the 1966 (von Brandenstein (1970:8)). The anthropological literature on the Ngarluma is listed and briefly discussed by von Brandenstein in the introduction to his three-volume collection of narratives in the Ngarluma and Yindjibarndi languages (von Brandenstein 1970).

The work just mentioned is without question the most important published source of Ngarluma linguistic data. It includes some 49 Ngarluma texts, averaging two to three pages in length, primarily from Mr. Robert Churnside, who was also the source of the material to be used in this project. Another publication by the same author is an annotated vocabulary of some 886 Ngarluma lexical items originally compiled around the turn of the century by the son of the first European settler on Nickol Bay, in the Ngarluma area (Hall 1971). This is extremely valuable material, written down at an early date by a person who quite obviously had native, or near-native, command of the language. In addition to these sources, and to other early recordings mentioned by von Brandenstein, there are brief discussions of certain points of Ngarluma grammar in O'Grady, Voegelin & Voegelin 1966, Hale 1967-8, and Nash 1976, and Ngarluma forms are cited in the important comparative study of the Ngayarda languages by O'Grady 1966. There is, as yet, no comprehensive account of Ngarluma grammar. Nor is there an extensive list of vocabulary items in an orthography which accurately reflects the phonological distinctions which must be recognized in Ngarluma.

Our data consist of 400 pages of field notes collected in 1960 by Hale, who worked with Mr. Churnside for a short period in Roebourne. The lexical research was guided in large part by Hale's earlier work on Warlpiri domains (IWDS), with necessary modifications for the coastal environment and cultural area.

The grammar of Ngarluma, and of its sister languages in the Ngayarda subgroup, proved to be of extraordinary interest in the context of what was known about Australian languages at the time these data were collected. So far as we are aware, this was the first documentation of an Australian language which had a passive rule and a nominative-accusative case system (cf. Hale (1967-8:772), Dixon (1972:136-7), Silverstein (1976:113), Nash 1976)). It is evident that the Ngayarda languages, including Ngarluma, have developed the passive rule in quite recent times and that the nominative-accusative case system also represents a recent change from the absolutive-ergative type which prevails in the Pama-Nyungan family. Because of this rather unexpected grammatical feature, rather more attention was given to the syntax of Ngarluma than to its lexicon during the field research period.

We feel that it is important to document as fully as we can the grammar of Ngarluma, and in many ways this will be the most important aspect of our work on that language. The dictionary itself will be the shortest in the project, approximately 1,000 entries, though each entry will include all of the detail which we have on the item, just as in the case of the other languages of the project. In addition to its function in documenting detail of lexical items,

the dictionary will also serve a corrective function, by recording certain phonological distinctions which are systematically merged in von Brandenstein's otherwise extremely valuable transcriptions of Ngarluma narratives. Moreover, it will complement the work recently completed by Frank Wordick on the closely related, but phonologically innovative, Yindjibarndi language (cf. Wordick 1982).

## 6. LARDIL

Lardil people are now concentrated on Mornington Island, one of the Wellesley group, at the southern extreme of the Gulf of Carpentaria, North Queensland. Tindale 1974 has Mornington, and the Denham Island shore directly across Appel Channel, as the traditional territory of the Lardil. However, Sydney Island is also said to have been a part of it.

The number of Lardil-speakers is not known. It is probably not in excess of fifty, and when Hale visited Mornington Island in 1960, fluent speakers of Lardil were in their forties or older.

Some anthropological literature has appeared concerning the Lardil people (for example, works cited in Tindale 1974) and an autobiography of a Lardil man, containing much valuable historical and ethnographic information, has appeared (Roughsey 1971). Many linguistic forms are cited in these writings, and some information of lexicographic relevance can be extracted from them.

Strictly linguistic works include brief comments by Capell appended to his studies of the languages of Arnhem Land (Capell 1942), papers by Hale 1965, 1966b, 1967, 1973b, Klokeid 1976b, 1978, McConvell 1981, Sjoblom 1976, and the doctoral dissertation by Klokeid, mentioned above (Klokeid 1976a). Except for Capell's work, these writings are based on the data collected by Hale in 1960 and 1967.

Certain aspects of the grammar of Lardil are covered in detail in Klokeid's work. There is, however, no lexicon for Lardil and a sketch grammar surveying all aspects of Lardil grammar has yet to be written.

During three months in 1960 and during a week in 1976, Hale collected material on Lardil from speakers living at Mornington Island. The research was devoted both to grammar and to the lexicon. The data amount to approximately 700 pages of notes. About two-thirds of this is on magnetic tape. We also have material on the closely related, and phonologically more conservative Yanggal language, of Forsyth Island. This is invaluable in understanding the changes which have taken place in Lardil, and we will therefore incorporate our Yanggal grammatical and lexical data into our work on Lardil, as an appendix cross-referenced to it.

In addition, an extensive study of the auxiliary vocabulary, *Damin*, was made. This material will also be thoroughly analyzed and written up. The exact form in which it will appear, however, will have to be determined through consultation with Lardil people. They may wish the *Damin* to be put in a separate volume, because of its special status in Lardil ritual.

The lexical data on Lardil were collected in an attempt to replicate the study of domains (embodied in the *IWDS*, see 3 above) in a maritime environment. The scope of our Lardil lexical data is, therefore, roughly



comparable to that of the Warlpiri domains study, but with the maritime orientation.

Lardil is of particular interest in Australian linguistics because of the fact that it has a nominative-accusative case system, rather than the ergative-absolutive system which prevails in Pama-Nyungan (see Hale 1970, for discussion). Lardil shares this property with the distant Ngayarda languages of the Australian west coast, of which Ngarluma is a representative (see 5 above). Hale 1970 assumed that Lardil represented a continuation in modern times of an ancestral Australian nominative-accusative system. Recently, however, convincing arguments against this view have been advanced (cf. McConvell 1981, Klokeid 1978). Evidently, both Lardil and the Ngayarda languages have, independently, changed to the nominative-accusative type, developing a productive passive rule in the process. Lardil's closest relatives are divided in this respect. Yanggal, like Lardil, is nominative-accusative, while the closely related Yukulta, spoken on the mainland, is ergative (Keen 1972, in press).

## 7. LINNGITHIG

Tindale 1974 includes Linngithig in his cover-term Winduwinda. As near as we can determine, the Linngithig subgroup of the Winduwinda were originally located southwest of the Embley River on the west side of the Hey River, on Cape York Peninsula. This location given by informants in 1960 does not agree with McConnel, who locates a group termed Leningiti much farther south in the Winduwinda area (McConnel 1939). Sharp's Lenngeti is located by him in the Alngith area on the northeast side of the Embley at the site of the former Weipa Mission (Sharp 1939). Alngith and Linngithig are very close sister dialects, and it is quite probable that the area identified by Sharp is at least contiguous to the Linngithig area identified by our informants. It is very probable that Linngithig is no longer spoken. The most knowledgeable speaker, Mr. Sam Kerindun, passed away several years ago. Little has been published about the Linngithig people or language. The kinship terms are given in McConnel 1950 and the pronouns, together with about a dozen lexical items are given in Capell 1956. Hale has published a brief grammatical sketch in an appendix to O'Grady, Voegelin & Voegelin 1966, and Linngithig forms are cited in Hale's brief comparative study of Northern Paman phonologies (Hale 1976c).

Our data on Linngithig comprise some 130 tightly written pages of field notes collected by Hale in 1960. The lexical coverage is roughly comparable to that of the Warlpiri domain study, with of course, the appropriate adaptation to the Peninsular environment and culture area. The grammar was also thoroughly surveyed.

Linngithig and its sister Northern Paman Languages are of considerable interest to comparative linguistics in Australia because of the far-reaching phonological changes they have undergone (cf. Hale 1964, 1966a, 1976c). While the Northern Paman languages are evidently quite closely related to the rest of Pama-Nyungan, the sound changes which they have undergone (including wholesale loss of initial consonants, and loss or severe reduction of the first vowel, together with a variety of vocalic and consonantal mutations) have so thoroughly altered the appearance of lexical items that, until relatively recent times, the close relationship of Northern Paman to its sister subfamilies was in serious question.

In addition to information on Linngithig, we have data on its closest relatives as well. And we propose to incorporate these data into the Linngithig volume, as a further contribution to the study of the comparative linguistics of Cape York Peninsula. It is unfortunate, but nonetheless true, that our data may be the last that will ever be obtained for certain of these languages. The data are, therefore, of considerable importance in our efforts to reconstruct the linguistic history of the area.

## 8. ARANDIC

The Arandic-speaking area occupies roughly the southeast quarter of the Northern Territory, extending a short distance into Queensland in the east and a somewhat greater distance into South Australia along the Finke River (cf. Tindale 1974, Strehlow 1968, Hale 1962, Breen 1977). The group includes communities referred to by the terms Kaytej, Kaititj, or Kaititja (see Koch, this volume), Aranda (or Arunta), Anmajerra, Alyawarra (or Illiara), and Antekerrephe. These are numbered 1 through 5 on the map (page 72) where the approximate locations are also given. Kaytej is clearly a distinct language within the group, and the southernmost Aranda (called Lower Aranda in Hale 1962, and numbered 6 on the map) is also probably a separate language. The rest of Aranda (including Strehlow's Northern, Eastern, Western, Southern, Central, and Alitera dialects), together with Anmajerra, Alyawarra, and Antekerrephe, probably form a single language, albeit one with considerable dialect diversity. These judgments concerning the make-up of the Arandic group are based upon a study of shared vocabulary, a part of which is reported in Hale 1962. The published portion of this study did not include Antekerrephe, the easternmost representative of the group, but subsequent assessment of its position quite clearly indicates that it is to be grouped with the Aranda-Anmajerra-Alyawarra dialect complex. Antekerrephe and Lower Aranda are no longer widely spoken, and the latter may in fact be extinct at this time. The other Arandic forms are still vital, however. Milliken 1976 gives the following numbers of speakers: Aranda (the dialects taken together) 2110, Anmajerra 839, Alyawarra 746, and Kaytej 380.

The Aranda have long occupied an important position in the study of man, and the anthropological literature on them is extensive. The most recent addition to this literature is Strehlow's monumental study of Aranda song and ritual (Strehlow 1971), perhaps the most important work yet to appear in the rich tradition of Australian anthropological studies. A number of linguistic works have also appeared. Relatively recent linguistic literature includes Strehlow's study of Aranda phonetics and morphology, representing Western Aranda primarily, but with many comparisons to the other dialects (Strehlow 1944), and most recently Yallop's grammar of Alyawarra (Yallop 1977). There is also a grammar of Antekerrephe, in manuscript form, by Breen (n.d.). The other forms of Arandic are not well represented in the literature, but linguistic research is currently underway on the most vital languages and dialects (see, for example, Koch, this volume).

Our data consist of approximately 2,000 pages of field notes collected by Hale in 1959-60. Most of this material is also on magnetic tape. All of the varieties of Arandic are represented in these data, except Northern Aranda. The best represented are Kaytej, Alyawarra, Western Aranda, and Lower Aranda,



in that order. The bulk of the data were collected at intervals before, during, and after the compilation of the Warlpiri domains study (IWDS), so they are to a large extent informed by the results of that study. But there is also a relationship in the reverse direction, since aspects of Central Australian language and culture which emerged first in the Arandic study were systematically checked in Warlpiri as well.

In addition to straightforward documentation of lexicon and grammar, a major interest in the Arandic study was comparative (cf. Koch, this volume). This remains a central interest of the principal investigator, and much of the effort in the Arandic phase of this project will be oriented around the problems of Arandic comparative linguistics. The group is especially interesting for a variety of reasons. Being located in an area which embraces the oasis-like portions of the MacDonnell Ranges, it would have been possible for Arandic-speaking peoples to remain in the Centre during periods of severe drought in interior Australia. There is much to suggest that the Arandic peoples were in fact isolated in this manner, in relatively recent times, for a period long enough to permit the extraordinary linguistic changes which the Arandic languages exhibit to develop without interference, or inhibition, from the intense multilingualism which prevails in areas of tribal contiguity. The evidence for this isolation does not derive solely from the linguistic considerations just cited, but from other spheres as well, most notably from the work of Birdsell 1950 in physical anthropology. We have an excellent opportunity here to pool evidence from a variety of disciplines in an effort to reconstruct the demographic history of the area. The linguistic evidence is an important component, perhaps the central component, in this effort.

A reconstruction of Arandic linguistic history will involve not only comparative work internal to the group, but also a detailed study of the position of Arandic within Pama-Nyungan. The latter was initiated by O'Grady in his important study of the linguistic implications of the western boundary of the Aboriginal institution of circumcision (O'Grady 1959), and during the past twenty years, the present investigator has been gradually adding to O'Grady's original body of Arandic/Pama-Nyungan etymologies. Our Arandic dictionary will incorporate what we now understand of Arandic comparative linguistics, both internal and external, and all etymologies which we believe to be valid will be included.

Arandic phonology is interesting synchronically in that it has an unusual inventory of phonological segments. It has modified the original vowel system of Pama-Nyungan by merging the front-back distinction among high vowels and transferring the rounding feature to neighbouring consonants. This has given rise to a system which is rather difficult to analyze synchronically (see Breen 1977, and Wafer 1978, for some discussion). Our work will provide much information relevant to the history of this system, and we will, in the grammar section, offer our own synchronic analysis of Arandic phonology and detail the arguments which we believe supports it over alternative analyses.

## 9. CONCLUDING REMARKS

There are many reasons why lexicographic work is important. Comparative linguistics, for example, depends very heavily upon accurate documentation of the vocabularies of individual languages and dialects, and the task of those of us who are involved in the effort to reconstruct the linguistic history of Aboriginal Australia will be greatly eased when larger amounts of reliable lexical resource materials become available. The results of the project described here will be a contribution to this area of concern, quite clearly. And in general our work here will be relevant to areas of linguistic study which involve the lexicon in one way or another.

It is obvious from the general tenor of this proposal that we place special emphasis upon the relationship between the lexicon and the rest of grammar. In fact, we view the study of the lexicon of a language as an integral part of the study of its grammar. Accordingly, we take the position that our dictionary entries must, above all else, provide information which can be used to advance the study of grammar. In addition to the actual presentation of information belonging to this category, the project will also necessarily result in a suggested model for its incorporation into the lexicographic record of a language.

## 10. 1983 POSTSCRIPT

This project received partial support from the National Science Foundation, Grant number BNS-7913950, for which we are grateful. We have had to reduce the size of the project considerably, the primary focus now being the dictionary of Warlpiri. The bulk of the work on this has so far been done by Mary Laughren and David Nash, whose report is included in this volume (see page 109). At the present time, the following items are in preliminary form:

- (i) a dictionary of the domain of body parts;
- (ii) a dictionary of the domain of flora;
- (iii) a dictionary of morphologically simple verbs;
- (iv) sections of the main dictionary, namely words beginning with *l*, *m*, *n*, *ny*, most words beginning with *j*, and most beginning with *w*.

In addition to these items directly concerned with the dictionary, two theses have been completed which contain material which will be incorporated in companion volumes relating the dictionary to the grammar of Warlpiri (namely Nash 1980, and Simpson 1983). Three published papers were also written, in part, with a view to the dictionary (Laughren 1982, Nash 1982 and Hale 1981).

Besides the work which has been done on Warlpiri in connection with this project, a preliminary dictionary of Lardil with companion grammatical sketch, has been completed (Hale, Farmer, Nash and Simpson 1981). This includes a list of known forms in the auxiliary language, Damin, as well. Some initial preparations for the compilation of a comparative vocabulary of the Arandic languages have also been done, by M.I.T. graduate student Lisa Travis; this has consisted of the preparation of card files, with illustrative sentences, for Kaytej, Alyawarra, and Lower Aranda.

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WARLPIRI DICTIONARY PROJECT:  
AIMS, METHOD, ORGANIZATION AND PROBLEMS OF DEFINITION

Mary Laughren & David Nash

1. AIMS

The aim of the project is to get down on paper everything linguists know about Warlpiri language and culture. There are two prongs to the effort: the dictionary, which is to some extent encyclopaedic, and a companion reference grammar. We see the project as never-ending in the sense that while our (the present linguists') contribution will come to an end, hopefully in a few years, Warlpiri people and possibly other linguists will continue adding to and correcting dictionary entries (cf. Hale's Project Description, this volume). The companion grammar will incorporate all the published grammatical writings about Warlpiri (see References).

The dictionary is not simply for other linguists, but also for school teachers working in Warlpiri communities, especially where there are bilingual school programs (Yuendumu, Willowra, Lajamanu). The dictionary, possibly in various abridged editions, is for use by the Warlpiri themselves, including school children literate in their language. Naturally, we hope that the dictionary will be of use to people in other disciplines, such as anthropologists, botanists or geographers. Thus, at times we present information which may be considered encyclopaedic rather than strictly the concern of a dictionary.

2. CONTRIBUTORS

The Warlpiri dictionary project is a team effort of several linguists who have worked on the language, and many Warlpiri people.

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The linguists are Ken Hale (M.I.T.), Mary Laughren (N.T. Department of Education linguist attached to Yuendumu School), who has twice visited M.I.T. as a post-doctoral Research Associate, David Nash and Jane Simpson, who both wrote their doctoral dissertations under Hale's supervision at M.I.T., and some doctoral student research assistants at M.I.T. Steve Swartz (S.I.L., Lajamanu) also made available to us his preliminary Warlpiri-English word list, and we have had access to all known previous linguistic work on Warlpiri, including Tindale's word list, Pink's fieldnotes, H.H.J. Coate's notes, L. Reece's publications and L. Jagst's publications.

The Warlpiri contributors are mainly from Yuendumu and Willowra. Younger literate Warlpiri are involved in literacy work there, and contribute in many ways, under the Yuendumu school linguist's supervision. Older Warlpiri contribute texts which are recorded and transcribed at Yuendumu and Willowra, and are consulted as authorities during the checking of entries.

### 3. SUPPORT

The project has been funded by the N.T. Department of Education, which has a program of bilingual education in schools in the Warlpiri-speaking area, as well as in other Aboriginal areas. The Australian Institute of Aboriginal Studies also awarded a generous grant for the payment of Warlpiri consultants. The research and dictionary writing being done at M.I.T. has been financed by a grant from the National Science Foundation (Grant BNS-7913950).

### 4. ORGANIZATION AND FORMAT

The dictionary consists basically of a list of entries, each headed by a Warlpiri word or lexical item. Among other things, we are attempting to define the meaning(s) of each entry, as Hale's contribution in this volume explains. Each meaning within an entry is numbered, which then allows for accurate cross-referencing (in other definitions, in synonyms, and in the cf. section).

To follow the account of our methodology and the layout of our dictionary entries, the reader should consult the accompanying sample entries (section 7 below).

Entries will have a standard format, but because of the spread of work on the project, there are several different formats currently in use. The longest standing repository of data is the working file of some 7,000 manuscript slips maintained at Yuendumu and M.I.T. (there is a 1982 copy of this file on deposit at A.I.A.S.).

Typewritten entries and computer-entered entries follow an elaborated format, with slight differences in the order of information between the two. The typewritten entries (see 7 below) have the following format. After the main entry, or head word (written in upper case), the grammatical category (part of speech) to which the entry belongs is indicated by an abbreviation in parentheses. Any alternate forms, including dialectal alternates, are then noted, if necessary, with a letter indicating the dialect. (By convention, Yuendumu or southern Warlpiri is not marked in this way.) Synonyms (in a

narrow sense of the term) are listed, and in some cases, antonyms are then is given as definition or meaning number 1.

The computer-entered entries of 1981-82 have the following format:

HEADWORD [with full hyphenation] (part of speech, or parsing into parts of speech of elements): S.L. [special language]/Yikirrinji [if appropriate, an indication that the term is from the respect vocabulary].

General meaning [using case-frame terms, xABS, and so on]: glosses.

Example sentence. [source] 'English translation of example sentence.'

Encyclopaedic information [such as edibility, Dreaming affiliation, and so on]. Alt. Cf. Syn. % Dialectal information. <Etymological information.

See:

NOTE: "[ ]" enclose explanations of format, and are not used in the actual dictionary entries.

Special terminology is used in the definition of verbal meanings. For verbs, the predicate argument structure is given (cf. Hale's Project Description, this volume). Following the algebraic convention of using letters near the end of the alphabet for variables, the letters x, y, z, w and so on are used, with the appropriate case label, to represent any nominal argument in the indicated case. At the same time, the semantic roles of the arguments are spelled out in the definition. The syntactic roles are also given partly through case labels, as elaborated in the companion grammar. By convention, x is always the subject, and y, z, w, and so on are used for oblique (non-subject) arguments. A non-obligatory argument is indicated by placing its variable letter in parentheses. Where the verb selects a particular subset of lexical items for any obligatory argument on semantic grounds, then this selectional restriction is indicated in the actual definition by a qualifying statement juxtaposed to the argument's letter-case code. For example, the definition of the verb *kipi-rni* 'to winnow, yandy' needs to indicate the selectional restriction of the object argument yABS to be the sorts of things that are winnowable. This is achieved by the qualifying statement that immediately follows yABS in the definition:

*kipi-rni* (tV): xERG causes yABS (small particles, as seeds, stones) to come to be distributed in some desired arrangement by manipulating some entity (zINSTR, e.g. coolamon, piece of bark, basket) in which y is located in such a way that y moves along a circular path beginning and ending in said entity.

Following the definition, the English glosses are given. These are underlined (in the typewritten format) to stand out from the definition; alternatively, a different type face could be used (cf. entries in the appendix). It is these glosses that are picked up by a computer program which generates the English-Warlpiri section of the dictionary (see 9 below).

Following the glosses, example sentences are given. For the most part, these sentences are taken from Warlpiri texts recorded or transcribed by Hale or Laughren. Some example sentences are specially constructed by Warlpiri assistants working with Laughren at Yuendumu. While we try to give example sentences which nicely illustrate the meaning of the word in question, we sometimes give Warlpiri definitions of the word as supplied by our consultants or Warlpiri literacy workers. For verbs, we attempt to give example sentences including a noun or noun phrase for every nominal argument of the verb. For many nouns referring to specifically Warlpiri manufactured goods (tools, weapons, implements, ceremonial paraphernalia), as well as traditional foods, flora, fauna and topographical terms, we have tried to give as many descriptive sentences as possible. Such sentences elucidate the form, appearance, uses, modes of manufacture, significant differences from similar terms, and so on - see, for instance, the example sentences in the entry for the lizard *liwirringki* in section 7 below.

Following the example sentences, we have a section introduced by 'See also:', which lists words with similar meanings or words which may have an English gloss in common with the glosses given.

Fixed expressions, or idiomatic expressions in which the head of the entry is used with the same basic meaning as in the main entry, are given in an indented list; see the idiomatic expressions listed in the entry for *langa* 'ear' in section 7 below. They are also treated as a subentry of the main entry. This approach is also used for preverbs; see the treatment of the preverb *tiri* in Hale's Project Description (this volume).

A word may have several meanings, the second and third meaning being derived in some way from the primary meaning. Each meaning is defined and numbered and treated in the same way as the first meaning. This is true of the subentries in the *langa* 'ear' entry.

A further sub-heading we have found useful is 'Comment:'. This is a broad catch-all which is used primarily to give a supplement of information to the non-Warlpiri user, information which we do not believe belongs in the core meaning of the word. The comment may be syntactic or grammatical in nature, it may be a cultural note, or it may be a warning to the English-speaking user that an interpretation or use to which he or she is tempted to put the word is not correct. For an example, see the comment under meaning 8 of *paka-rni* - unless the reader is warned otherwise, he or she might use a term appropriate to men for a similar activity performed by women, which in fact calls for a different term.

## 5. METHODOLOGY

Work on the dictionary has proceeded simultaneously at Yuendumu and M.I.T. At both places there is a file of cards and paper slips, with one word or enclitic or suffix per card. Some words have more than one card because the amount of information does not fit on one card. This file has grown continually since Pam Harris and Kathy Stoddart began it at Yuendumu School in mid-1974, based on Hale (1959, 1974). Mary Laughren began work at Yuendumu in September 1975, but only started working on the cards in earnest in 1978. Many excerpts have been added at M.I.T. since 1980.



Most entries in the dictionary file indicate the following information, usually in manuscript: the Warlpiri word, a rough English meaning or equivalent, some example sentences, explanations in Warlpiri and/or English, and references to transcribed texts, which have been painstakingly excerpted. Warlpiri books produced at Yuendumu and Willowra for the bilingual school programs are also a rich source of vocabulary in context. Concordances produced by computer assist the task of excerption (see section 9 below).

When it comes to composing the dictionary entry, we assemble all the references to texts in which the word is used (given on the card, or indicated by a page reference), and, along with our own understanding of the word if it is very familiar to us, we attempt to define its meaning or meanings. This is the most difficult part of the project. Once we fix on a definition, we choose appropriate example sentences, glosses, cross-references, and so on.

The dictionary file cards generally have an indication of synonyms, antonyms and words with similar or related meanings. This information is then put into the appropriate section of the entry.

At Yuendumu, each entry has been typed on a separate sheet of A4 paper, and the sheets are kept in alphabetical order in loose-leaf folders. This allows for constant corrections, additions and so forth, either on the original sheet or on a sheet slipped in after the entry sheet.

## 6. WHAT IS 'MEANING'?

We have found the most intellectually difficult part of the dictionary writing process to be the definition of 'meaning'.

Simply put, one objectively discovers the 'meaning' of a word by studying its uses in comparison with what one already knows of the language, and then generalizes by a process of deduction so that one is capable of using the word correctly. One is not always able, however, to put the 'meaning' explicitly into words, that is, to explain what a word means, at least not without great intellectual effort and study.

Some classes of words are easily definable in terms of other words, some classes of words are not. When one defines the meaning of a word, one wants to encompass its entire semantic range, so that one's definition does not rule out some perfectly legitimate use of the word. Conversely, one's definition should not be so general as to allow or predict a usage which is not acceptable to people who 'know' the language.

The meaning of many nouns, those which denote a concrete entity (life form, body part, and so forth), is probably more easily and accurately conveyed by showing the entity and saying "That is what we call 'so-and-so'", than by a description of the entity. This calls on the tacit semantic knowledge of the user to correctly pick out the referent. In a bilingual dictionary one gives the equivalent word in the other language or by using a Graeco-Latin appellation. Many mono-lingual dictionaries resort to photographs or drawings because an accurate mental image of the 'entity' or 'referent' is tied so closely with one's knowing what it is.

Abstract nouns, adjectives, verbs, on the other hand, are more amenable to definition by 'words' and examples of usage: 'A' means 'such and such' as in '....'. Verbs are particularly complex in that they encode syntactic and morphological information as well as purely semantic information. They form the main link, certainly in a language like Warlpiri, between the semantic component and the morphosyntactic component of the language.

A verb selects a nominal subject in a certain case; some select a direct object in a certain case and some an indirect object in a particular case, as well as allowing for other nominals in a number of possible cases. To have a closer look at how we have chosen to treat these different types of words (concrete entity N, abstract N, V), we will examine a number of sample dictionary entries. In the course of the examination, a number of other issues will come up for discussion.

## 7. SAMPLE DICTIONARY ENTRIES

Firstly, consider the entry for the reptile *liwirringki*:

*LIWIRRINGKI* (N): 1. *Lerista* sp. (formerly *Lygosoma*), Burrowing skink.  
*Liwirringki ngulaji ka wita nyina yumurruwangu karalypajala*. 'The skink is small, hairless and smooth-skinned.' *Kunarlirrpi kujaka yangka wiri nyina, ngulapiya palkaju, witaluku liwirringkiji karalypardu. Karalypanyayirni wita - kirrirdipardu*. 'The skink has a body like the *kunarlirrpi* lizard but the latter is bigger. The skink is very smooth and small but is quite long-bodied.' *Ngulya kalunyanu pangirni liwirringkirli*. 'The skink digs itself a burrow.' *Liwirringki ngulaju yangka karnaripinki kujakalu nyina - kujaka walya pangirni. Kirrirdipardu ka nyina - witajala karnardikiji - liwirringkiji*. 'The skink is one of those reptiles like the *karnari* lizard which digs a burrow. It is a little bit long, but it is smaller than the *karnari*.

Syn. *PUWURLI, YILYINKARRI, YILYINNGARNA*.

The grammatical category is indicated as (N), a nominal. Synonyms are listed. This word has only one meaning that we are aware of and that is numbered 1. We give the meaning of *liwirringki* simply by giving the equivalent appellation in English and by indicating, to assist with more accurate identification of the referent, the scientific Graeco-Latin name of the species of which it is a member. The example sentences describe the physical appearance of this skink and give some information about its habits and habitat.

Now consider the entry for the body part *langa*, also a N and also naming a concrete entity, at least in senses 1. and 2.

LANGA (N): Syn. KURANPA.

1. Body part: organ of hearing, ear. *Yapa ka nyina langajarrakurlu.* 'A person has two ears.' *Langajarraju ngulaju purda-nyanjakurlangu.* 'The two ears are for hearing with.'

LANGA-LARRA (N): (lit. ear-split)

1. ear with deliberately made cut in it, as on cattle for identification, and on people for ceremonial purposes: ear-mark.

*Kujakalujana yangka puluku langa pajirni langalarrakurra, ngulaju yungulujana milya-pinyi.* 'They cut the cows' ears to make an ear mark so as to identify them.'

LANGA-PARRAJA (N): (lit. ear-coolamon)

1. ears which stand out prominently on sides of head: bat ears.

*Tangkiiyiji kalu langa-parraja nyina.* 'Donkeys have bat ears.'

The first sense 1. is what we believe to be the primary of *langa*. Note that before the specific mention 'organ of hearing' is 'body part' which indicates the semantic field in which the word being defined is situated. Not all words are thus categorized, but there are a number of clearly delineated semantic fields, such as kinship, spatial and temporal terminology, and parts of the body, for which it seems preferable to draw attention not just to each discrete element, but also to the relational aspect between the elements of the entire domain. As well as treating each element as a separate dictionary entry, these fields will be treated in detail in companion monographs with charts and diagrams as appropriate: cf. Hale 1959, Laughren 1978, 1982b. Some terms deserve an essay, as in Nash and Simpson 1981, Nash 1982a. Reference is made in the relevant entries.

The English equivalent for *langa* in sense 1. that is, the gloss, is 'ear' (underlined in some formats).

Following our definition 1. of *langa* and the example sentences, we have indented sub-entries, in which *langa* in the sense 1. figures as part of a compound noun of fixed nominal expression.

As in many, if not all, languages, terms primarily used for designating parts of the human and animal body are used to refer to body-like parts of other, typically inanimate entries. This general extended meaning of *langa* is given in definition 2. Sub-entries which show specific examples of how meaning 2. is applied are given as 2(a) and 2(b).

## LANGA (cont.)

2. Any two ear-like parts (appendages) of an entity:

(a) Cross-piece of native spindle (see *WIRRINKIRI*).

*Yangka kujakapala warntawarnta wirrinkirirla ngunami watiya witajarra ngulaju kalujana ngarrirni langajarra.* Those two small sticks which lie crossways on the spindle are what they call the two 'ears'.

(b) Ear-like extension on side of billy-can (see *KARTAKU*) through which wire handle is attached: flaps.

*Nyarrpara ngajunyangu kartaku langakurluju?* Where's my billy-can - the one with the 'ears'?

The third meaning of *langa* is more abstract, as it signifies the function of the 'ear', a being's ability to perceive sound by means of the ear (*langa* 1.) and the associated body part and hearing process. This meaning is illustrated in the example sentences.

## LANGA (cont.)

3. Ability to perceive sound via the ear (*LANGA* 1.): sense of hearing, hearing.

*Langarlangu ka nyiirn-karrka, langa yika warungka-jarri.* Her hearing is badly affected, she is deaf.

*LANGA-NYIIRN-PUNGU* (N): (Lit. ear-deafener)

1. that which makes loud noise which causes bad sensation in hearer and which prevents hearer from perceiving other sounds: deafening, noisy, loud, boisterous.

*Yalumpupatuju langa-nyiirn-pungunyayirni, kujakalu kitiyarla kulkurrukarikirra manyu-karrimi.* Those people who play guitars late into the night are very noisy. *Ngulangku kujaka walya yarlu-mani kirayitarlu ngulaju langa-nyiirn-pungu.* That grader that clears the ground is deafening.

The fourth meaning of *langa* is very closely related to *langa* 3. We might say that the passage from *langa* 1. to *langa* 4. is by way of *langa* 3. *langa* 4. is defined very generally as the faculty of understanding. It is that ability or part of beings which allows them to process sounds perceived by the ear, to think about them, to reason and hence by extension to indulge in any thinking process, not necessarily linked with hearing. In English, apart from the more abstract words such as mind, understanding, intelligence, we symbolize that faculty by body part terms: head, brains (also used figuratively in this way in Warlpiri).

Fixed expressions involving the use of *langa* 4. are given as sub-entries.

*LANGA* (cont.)

4. Faculty of understanding: mind, memory, understanding, intelligence, reason, sense, head, brain(s).

*Purda-nyanyi karnanyarra. Langakurlu karna nyina.* I understand you. I've got brains.

*LANGA-MARDA* (N) : syn. *WANGAMARRA, WARUNGKA*

1. unable to understand and behave in intelligent or reasonable manner: mad, silly, retarded, crazy.

*Langamarda ka nyina yaliji - warungkanyayirni.* That person is mad - very crazy.

SEE ALSO: *RAMARAMA*

*LANGA PATI* (V. expr.) (lit. ear-firm)

1. of being who refuses to take notice of what others tell him: disobedient, wilful, stubborn, obstinate, thick-skinned.

*Langa pati ngulaju karlipa puta yilya kuurlukurra - wingki-nyayirni.* We try to send the disobedient child to school but he just ignores us. *Langa patingkilki kajana kurdu-kurdu pakarni - warungkarlulku.* That wilful one is hitting the children - he takes no notice of us now.

SEE ALSO: *MINA, WARUNGKA, WILJI, WINKIRIPA, WINGKI*

\**LANGA* 4. is used in many idiomatic expressions.

*LANGA-NGKU MA-NI* (tV): (lit. ear-ERG get)

1. xERG (re)calls to mind (*LANGA-NGKU*) yABS: to call to mind, recall, remember.

*"Karlijarraju nyarrpara?" "Karija." "Yangkaju kanpa purda-nyanyi kujarnangu karlijarra yungu?" "Karija." "Yangkajala kujanpalanyanu pungu kulungku nyuntukupurdangka-jarrarlu." "Yuwayi, yuwayi, langangu manulkurna palka karnangu mardarni."*

*"Where are those two boomerangs?" "I don't know." "Don't you remember those two boomerangs that I gave you?" "I don't." "You know those two boomerangs that you and your brother fought with." "Oh yes, yes. I remember now. I've got them for you."*

SEE ALSO: *MANNGI-NYA-NYI, PURDA-NYA-NYI.*

LANGA-NGKU MARDA-RNI (tv): (lit. ear-ERG have)

1. xERG keeps in mind yABS: to keep in mind, keep thinking of, remember.

*Langangkulparna mardarnu kujanpaju jangku-pungu nyurruwiyi.* I've kept in mind what you promised me a long time back.

SEE ALSO: PURDA-NYA-NYI.

LANGA-KURRA-JARRI-MI (iv): (lit. ear-ALL-become)

1. xABS, message, is heard and heeded by yDAT: to take notice of, heed, get the message, take in.

*Langakurra-jarrijaju yalumpuju kujanpaju ngarrurnu ngurrju nyinanjaku pamawanguku.* I've taken in what you said to me about being well-behaved and not getting drunk.

SEE ALSO: LINPA, MANNGI-NYA-NYI, PURDA-NYA-NYI.

LANGA-KURRA-MA-NI (tv): (ear-ALL-make)

1. xERG causes yABS, message, to be heard and understood (see PURDA-NYA-NYI 1. & 2.) by zDAT; to get something into someone's head, to make someone take note of, to make someone understand, to make someone take notice of/heed (what is said to him).

*"Nyampuju langakurra-mantanyanu!" pututu-pungulparla jajinyanurluju kurdukuju.* "Now get this into your head!" the father kept telling the son. *Jajinyanurlulparla langakurra-manu kurdunyanuku.* The father was making his son take notice of what he was saying to him.

Finally, as a Comment, is a meaning and use of *langa* in a fixed expression which appears rather idiosyncratic to us.

LANGA (cont.)

\*LANGA is also used in the fixed expression LANGA-WANGU PARNKA-MI (lit. ear-without run)

1. xABS runs (see PARNKA-MI 1.) very fast, typically to avoid something undesired, danger (y-EVIT.): to run like the wind, to run away as fast as his legs can carry him, turn and run, drop everything and run, clear out fast.

*Wirriya langawangu parnkaja warlukujaku.* The boy ran off as fast as he could to get away from the fire.

SEE ALSO: LANI

Consider now the definition of the abstract noun *liwirnpa*:

**LIWIRNPA**

1. intense desire to eat meat: hungry for meat, meat-starved, craving meat. \*Meat (see *KUYU* 1.) is the food most highly prized by the Warlpiri. *Liwirnpa ngulaju kuyuku yarnunjukuju*. 'Liwirnpa' is to be hungry for meat. *Wijakuyuju witajala ka nyina*. *Kuyu karnalu ngularrajuku ngarni kuyuwangurla liwirnparluju*. The 'wijkuyu' is tiny. We only eat its meat when we have no other meat to eat and are meat-starved. *Kuyukupurdalku karna yani*. *Kuyu yilparnaju pakakarla miyijangkarlu liwirnparlu*. I'm off to hunt for some game. To kill some animal as I'm meat-starved after only having vegetables and fruits.

SEE ALSO: *JIRNAJIRNA*, *PURRAKU*, *YARNUNJUKU*

An alternate way of rendering 1. would be:

1. intense desire (see *NGAMPURRA* 1.) to eat (see *NGA-RNI* 1.) meat (see *KUYU* 1.).

This type of cross-referencing, in which each main meaningful element of a definition is cross-referenced so that the reader can check the meaning of the terms used to define the entry may be desirable from a strictly linguistic point of view. However, we feel it is unnecessary in a definition such as this one, where the meaning of the definition is unambiguous. Were this not the case, then cross-referencing would be required, as in the *paka-rni* entry discussed next. On the other hand, for the non-Warlpiri dictionary user, the cultural comment about meat is probably justified. In fact, the *kuyu* (meat)/*miyi* (vegetable food) dichotomy is exemplified in the third example sentence.

We now turn to an example of a verb, *paka-rni*. Like most Warlpiri verbs, *paka-rni* has a very general meaning which we have tried to put into words as Definition 1. Warlpiri *paka-rni*, like English 'hit', does not obligatorily contain as a component of its meaning the active, deliberate participation of the agent (subject). The subject of *paka-rni* does not even have to move - the object may move into contact with the subject. We feel it is necessary to bring this to the user's attention because our English-speaker's stereotypical notion of 'hit' probably does have such a component. Further, because we suspect that even in the Warlpiri mind there is not absolute equivalence between active (hitting) and passive (getting hit) with respect to *paka-rni*, rather a difference of semantic focus, we have spelled this out as subentries 1 (a) and 1 (b) respectively. (The section symbols in parentheses refer to potential cross-references to the companion grammar.)

## PAKA-RNI (tv):

1. xERG produces concussion on the surface of yABS, by coming into contact with y: (a)x moves: hit, strike, bump, crash into, slap, kick, knock, whip, run into, beat, thrash, thresh.

*Turakirli puluku wirijarlu pakarnu parnkanjakarrarlu.* The moving car hit a big bullock. *Rdakanku wirriya pakarnu kapirdinyanurlu.* The boy was hit by his big sister. *Purlja kalalu pakarnu wirliyarlu.* They used to strike the hair-string ball with their feet. *Mukakilpapala pakarnurra, pakarnurra...* Kala mukakilpapala wayipurrurnu. They threshed the branches of the native plum and continued threshing them. Then they gathered up all the plums. *Kajilpa yapanku wirliyarlangurlu palka-manarla yuruturla - murdukayijangka pakarninjawarnu - marlu, ngula kajikanyanu kuyulku manirra.* If someone on foot for example, finds on the road a kangaroo run over by a car, then he can take off the animal for himself.

INSTR. (§ ) xERG hits yABS by causing some instrument (zINST) to come into contact with y: to hit with, strike with, knock with, and so on.

*Kutururlu kalunyanu pakarni karntanguju - kulungkuju.* The women hit each other with fighting sticks in anger. *Watingku kalu-nyanu pakarni karlingku kulungku.* Men hit each other with boomerangs in anger.

EFFECT. (§ ) xERG hits yABS thereby producing an effect zALL predicated of y: to hit to/till, hit and make V/Adj.

*Karnta pakarnu watingki yalyukurra.* The man hit the woman and made her bleed. *Nyurnukurra pakarnu tarnnga.* He beat him to death.

CON (§ ) xERG tries to hit yDAT: to take a swing at, hit at, strike out at. \*yDAT is cross-referenced in the AUX. by double DAT.

*Malikikirlajinta pakarnu watiyarlu wirriyapardurlu.* The little boy tried to hit the dog with a stick. *Pakarnujurla kulungku.* She tried to hit me in anger.

(b) x is some stationary, typically inanimate rigid entity, as tree, door frame, and so on, and y is typically a being in motion. x is typically unmentioned; reference is to the effect of concussion on y: to bump, knock. *Jurruju pakarnu - yirna nganta yuwarlirla yikayarlarra.* I bumped my head (lit. it struck my head) as I was about to go into the house.



2. xERG cuts (see PAJI-RNI 1.) yABS, typically wood, tree, by manipulating some instrument (zINST), typically an axe: to chop, cut, hack.

*Kalarnalurla watiya pakarnu jangnapaku mayingkarlu.* We used to chop trees with an axe to get possums. *Warlkurrurlu ka pakarni warlu.* He is chopping fire-wood with an axe.

SOURCE (§ ) xERG obtains yABS by chopping some entity (zABS), the material source of y: to chop, cut out.

*Jurlardarnalu pakarnu.* We chopped out a native beehive (to get the honey.) *Karli kalu pakarni manja.* They chop (wood for) boomerangs from mulga trees. *Yapa yalirli pakarninyarra - palka karna nyanyi - pama marda ka pakarni jurlarda.* That person is chopping over there. I can see him - he is perhaps chopping out 'sugar bag'.

MANUFACTURE (§ ) xERG manufactures yABS by chopping some entity (zEL), raw material of y: to make (by chopping), fashion, chip away at.

*Palyalungalpa marnajangka pakaka!* Make us some gum from the spinifex. *Pikirri ka purlkangku pakarni ngurrangkarlu wirlinyijangkarlu - manjajangka.* The old man is fashioning a spear-thrower from mulga in camp after returning from hunting. *Ngirntirlipanyanurla kurlardaku pakarnirra.* Let's fashion the end (lit. 'tail') of our spears.

TRANSFORMATION (§ ) xERG, causes yABS, cavity, to form on surface of some entity (zLOC), by chopping that entity: to chop (holes) in, cut (notches) into.

*Warlkurruju yungka, yungarnuju puju pakarninjayani.* Give me the axe so I can cut myself some footholds.

SEE ALSO: JARNTI-RNI, PIRRKI-RNI.

3. xERG pierces (see PANTI-RNI 1.) the ground, by forcefully manipulating some sharp-ended instrument: pierce, dig, thrust into, stick into.

*Kujakalu yangka rdakurlangu pangirni, yapangku, ngulakalu pikingki pakarni.* When people dig holes, for example, they pierce (the ground) with a pick. *Ngapakulku pakaka! Kutu kapurlupa palka-mani.* Stick it in now to see if there's water. We'll find it close (to the surface).

SEE ALSO: PANGI-RNI, PARRKA-RNI

4. xERG paints (see MAPA-RNI 1.) yABS: to paint, put on, apply.

*Jintawarlayi-jarrinjarlalkulpalunyanu karlijiji kujurnu. Pakarnulpalunyanu karrwarawarlu karljingki. Yawuu! Karljingki yungulpalunyanu pakarnu - namurnamunyayirni yilpalu nyinaja yijardunyayirni.*

Having assembled, they put white pipe-clay on each other. They painted each other with stripes of white pipe-clay. Yes indeed, they painted each other with white clay - they were truly perfect.

SEE ALSO: PIIRL-PAKA-RNI

5. xERG, a being, looks for (see NYA-NYI, WARRI-RNI) and kills yABS, being found by x: to hunt, kill, hunt and kill.

*Kuyu wardapipala jaraku pakarnu karntajarrarlu. The two women both killed goannas. Kuyu marlu kalu watingki pakarni nyampuardingkirli. The local men hunt and kill kangaroos.*

SEE ALSO: PI-NYI

6. xERG, head cold/influenza (see MIIRNTA 1.), causes yABS, being, to be ill (see NYURNU 1.): to have a cold, have the 'flu, to be stricken with a cold/'flu/pneumonia.

*Kuntulparlu kurdu wita pakarnu. The baby has a cold. (lit. The cold has struck the small child.) Miirntarluju pakarnu. I have a cold.*

SEE ALSO: PI-NYI

7. xERG fills self by eating/drinking (see NGA-RNI 1.) yINST, large quantity of food or drink: to fill oneself with, stuff oneself with, have one's fill of, gorge oneself on.

*Watingkinyanu kuyungku pakarnu. The man had his fill of meat. Pamangku kapurnaju jalangurlu pakarni. I'm going to have my fill of grog today.*

8. xERG, man, initiates yABS, youth, at circumcision ceremony (see KURDIJI 3): to initiate, circumsise, make man.

*Nyarrpararlangkulu pakarnu kurdijirla? Where were you initiated?*

9. xERG, typically man, performs ceremony (see PURLAPA) yABS by moving along a path in a stylised manner: to dance, perform a corroboree. \*Only men and boys are said to *purlapa paka-rni*.

*Watipaturlu kalu purlapa pakarni jalyirrpakurlurlu manu kuruwarrikirlirli.* The men are dancing decorated with leafy branches and with painted designs.

SEE ALSO: PURLAPA, PI-NYI, WIRNTI-MI

10. xERG, tries to be at same place as yDAT by moving along a path in the direction of y: to try to catch up with, try to reach. \*yDAT is cross-referenced in the AUX by a DOUBLE DATIVE (§ CONATIVE).

*Purdangirlikarirnarlajinta pakarninjanu mutukayikirliki.* I tried to catch up with a truck (but he was too fast).

Finally, we present an example of a preverb:

LARRA (pV): slitting, splitting. (see PANJARR-, PANPANPA, RDAMPIRR(PA), RDAWIRN-, RDIIRR-.)

LARRA-KATI-RNI (V): 1. xERG produces linear separation in the material integrity of yABS by applying pressure (KATI-RNI 1.) to y: trample and split, tread on and crack, stomp on and split, press on and split.

*Nganangku pikirri nyampu larra-katurnu ngajunyanu? Karija, yapakarirli mardangku larra-katurnu wiyarrpaku.* Who trampled and split this spear-thrower of mine? I don't know, someone must have trampled and split it on you - unfortunately.

LARRA-LUWA-RNI (V): 1. xERG produces a linear separation in the material integrity of yABS by some entity rapidly moving through the air and coming into contact (LUWA-RNI 1.) with y: to hit and split open, pelt and split. \*Where the nose (MULYU) of y is affected, then the meaning is that xERG causes the nose of yABS to bleed by causing something (zINST) to pass rapidly through the air and to come into contact with the nose.

*Mulyuju larra-luwarnu pirlingki.* He pelted me with a stone and made my nose bleed.

LARRA-PAJI-RNI (V): 1. xERG produces a linear separation in the material integrity of yABS by cutting (PAJI-RNI 1.) y: to split by cutting, to slit, to cut lengthways.

Watiya nyampu karna larra-pajirni jirrkarlikingarntirli. I am splitting this shaft in preparation for the foreshaft and tip.

SEE ALSO: PARLJA-YIRRA-RNI.

LARRA-PAKA-RNI (V): 1. xERG produces a linear separation in the material integrity of yABS, by chopping (PAKA-RNI 2.) y: to split by chopping.

Warlkurrujaralkupala manu. Jurrujarrajupalanyanu larra-pakarnu, jarnku wantijapala nyurnujarrajuka. Both of them siezed an axe. Each one split open the head of the other. Both of them fell down dead. Yalumpujukujana kapanku larra-larra-pakarnu, yaarl-pirri-manulkujana. He rushed and chopped them through and then landed on top of them.

SEE ALSO: PILJARR-PAKA-RNI, TIIRL-PAKA-RNI.

LARRA-PANTI-RNI (V): 1. xERG produces a linear separation in the material integrity of yABS, by piercing (PANTI-RNI 1.) y: to split by stabbing, pierce open.

Kulungkulku yangkaju yakajirri pirri-panturnu Yankirrirli, wirliyarlu. Manu karlangurlu larra-panturnu. In anger, Emu kicked a pile of bush raisins apart, with his foot, and then with a digging stick he split them open.

LARRA-PARNKA-MI (V): 1. xABS comes to have a linear separation in its material integrity: to split, crack, be split, be cracked.

Walya nyampu larra-parnkaja parduna-jarrinjarla. The ground here dried up and cracked. Pawala wita yika larra-parnkami, ngulaka larra-pinyilka. Where there is a small crack running along the ground is where he splits it. Tiirl-pungka kaninjararakarirla yungu larra-parnka. Split it on the side facing downwards so that it'll split right along.

Syn.: LARRA-YA-NI.

*LARRA-PI-NYI* (V): 1. xERG produces linear separation in the material integrity of yABS by coming into contact with y: split, tear, crack, slit.

*Nyarnturrjirna pikingki larra-pungu.* I split the clod with a pick.

SEE ALSO: *PANGKIRRI-PI-NYI*.

*LARRA-YA-NI* (V): 1. xABS comes to have a material separation in its material integrity: to split, crack, tear, split open.

*Larra-yani ka ngapakurlangu.* The water tank is splitting open.

Syn.: *LARRA-PARNKA-MI*.

There are several types of preverbs in Warlpiri (see Nash 1980, 1982b). The example given here is that of a semi-productive preverb which combines with any verb of the *paka-rni* type, that is, where 'xERG produces effect on yABS by some entity coming into contact with y'. The preverb and a gloss constitute the main entry and the preverb-verb compound is given and defined as a subentry. In the case of *larra*, the meaning of the compound is derivable from the meanings of the parts. However, with many preverb-verb combinations, this is not the case, and so it is necessary to spell out the meaning of the preverb-verb. We can note here that the intransitive verbs with *larra* are formed from intransitive motion verbs: *parnka-mi* and *ya-ni*.

## 8. LEXICAL RULES

There are several lexical rules referred to in the entry for *paka-rni*: INSTRUMENT, EFFECT, and CONATIVE, as well as SOURCE, MANUFACTURE, and TRANSFORMATION. The entries for similar transitive verbs of action exhibit some of these rules also: *panti-rni* 'spear' has PW (Part-Whole) INSTRUMENT, EFFECT, CONATIVE and also CREATIVE. *Pangi-rni* 'dig, scratch' has PW, INST and CR.

Lexical rules apply in a regular, predictable manner to lexical entries. They are triggered by the entry's meaning which relates, in the case of verbs, nominal arguments to the verb at the thematic level and at the level of grammatical relations by specifying at the same time the relation between a given thematic role and the specified grammatical function (subject, object, and so on). Lexical rules can alter the relation between the thematic role of a nominal argument and its grammatical function. That is, it alters the linking relations. A set of lexical rules will apply to all entries of the same semantic type. It may introduce an argument, or it may change the case of one. For Warlpiri, most lexical rules define the semantic relation between an argument NP of a verb and a non-argument NP predicted of the argument NP. The INSTRUMENTAL, CREATION, SOURCE, TRANSFORMATION rules are of this type.

Thus, a verb which is defined as 'zERG produces an effect on the surface of yABS, by actively coming into contact with y', will automatically allow the application of a lexical rule such as the Instrumental Rule (INST). In the

case of a verb such as *paka-rni* 1, this rule introduces a causative agent which links with xERG (thematic role = 'active producer of effect'; grammatical function = 'subject') and adds a means component which may overtly express the instrument used as zINST. In *paka-rni* 1., x is both the producer of the effect and the entity which actively comes into contact with y. After the application of the INST rule, we have an additional thematic component and an adjunct introduced: x produces the effect on y by causing something (z) to come into contact with y. We might also say that x causes something (z) to produce the effect on y by manipulating that thing such that it comes into contact with y. We can compare these definitions with that for the verb *mapa-rni* 1 'rub with, anoint, paint' given below. We note that while x and y are obligatory arguments of the verb *paka-rni*, z is not an obligatory argument; it does not need to be overtly expressed.

Since *paka-rni* 2. and 3. have as part of their meanings 'by manipulating some instrument ...', the Instrumental Rule is in fact written into the very definition and so does not reapply. These meanings contrast with *panti-rni* 1. and *paji-rni* 1., which have an argument structure identical to that of *paka-rni* 1. It is the incorporation of the instrumental phrase in the definition of *paka-rni* 2. and 3. which narrows their meaning. *Paka-rni* 4. has the same meaning as the verb *mapa-rni* 1., which we have defined as follows:

'xERG causes some adhering substance (typically fat, ochre, charcoal) to come to be thinly distributed over some area of the surface of yABS by x coming into contact with said area of the surface of y and manipulating said substance in such a way that, at the area of contact, said substance transfers from x to y along a path (zPERL/LOC) coincident with said area on the surface of y.'

Now the Instrumental Rule applies in two ways to this basic argument structure. If the adhering substance is expressed, then it must be in the instrumental case. Since an instrumental means expression can be added (as in the case of *paka-rni* 1.), then the instrument used (for example, a stick) must be expressed in the instrumental case.

Another very common lexical rule is the Conative Rule (CON), which applies to verbs such as *paka-rni*. This rule changes the case of the object argument of the verb while changing the meaning of the verbal predicate in a uniform way. The rule also only applies to verbs where xERG (subject) 'produces and effect on y (object) by actively coming into contact with y' or 'by manipulating some instrument which comes into contact with y'. Thus, more than one lexical rule can apply to the basic predicate argument structure of the verb.

A more general lexical rule which does not take into account the definition of verbal predicates, is the Part-Whole Rule, which is detailed by Hale 1981b. This rule will not be indicated in the dictionary because of its universal application, but the dictionary entries will need to be written in such a way that the user knows what items are semantically considered parts of other items for the purposes of the application of this rule. While its applicability is obvious for body parts and body part-like items, it is not so

obvious for an English speaker in connection with the relation between something and its name, or an entity and its shadow. In these cases, the part-whole relation must be specified in the dictionary entry.

## 9. COMPUTER WORD-PROCESSING

Since late 1980, computer word-processing programs have been used in the project.

The obvious advantage of composing the dictionary entries with a text-editor are that amendments can be made more easily than to typewritten work. Revision of an entry to take account of corrections and additions is more efficient, and the definitive entry evolves. Laborious retyping is eliminated, which removes one source of errors, particularly in the specialised material of dictionary entries. Sophisticated computer-linked printers made it possible to mix type-faces. To make our entries more readable we have varied the type-faces and made use of indenting so that the different sections of an entry can be readily distinguished by the reader. An example of computer produced typesetting is to be found in the Appendix.

There are other tasks for which a computer word-processor can be a great labour-saver, such as the preparation of abridged versions or revised formats of the full dictionary with very little retyping, and the future preparation of a much fuller Warlpiri Larousse or encyclopaedic dictionary. A magnetic tape record of the dictionary material could be made available to other researchers who may have their own uses for it, for instance, the preparation of a dictionary of Warlpiri sign language, or incorporation in an etymological dictionary.

We have already made a trial run of a program which generates an English-to Warlpiri 'finder list' for the main body of the dictionary. This is an 'Emacs extension', written in Lisp, which runs within the Emacs editing environment. The program relies on the finder items being specially marked in the main body of the dictionary. This is done at the moment by placing a caret '^' immediately before each English gloss. When the list is compiled of the English glosses followed by the corresponding Warlpiri item, another program quickly sorts the list into alphabetical order. The proper execution of the program depends on each entry adhering strictly to a certain standard format, which is a mixed blessing. On the one hand, the finder program will abort or produce garbled output if an entry has a format error, but on the other hand, it acts as an untiring 'proof-reader'. Another problem is that it is quite difficult (though tantalisingly possible) to define in terms of an entry's punctuation where each English finder item ends. The most practical solution may well be to use an end-symbol, such as '>', complementary to the begin-symbol '^'.

The computer word-processor is of assistance in preparing the source materials as well as in preparing the text of the dictionary itself. It is quite useful to have concordances of Warlpiri texts available when composing dictionary entries, so that the lexicographer can quickly select appropriate examples of the word used in a revealing context. Of course, the concordance lists all occurrences of each word in the given text, so there is some sifting to be done, but the excerption process is speeded up. The type of concordance

we have produced might be termed 'key-word index to line numbers'. As with a full key-word in context concordance, its word list also provides an indication of the frequency of each lexical item. A reverse-lexicographic (rhyming) list is easily generated to show the occurrence of suffixes.

Preparation of a concordance to a text presupposes that the text has been typed into the computer, which is also a useful step in preparing the text for eventual publication. So far, all of Hale's 1959 field notes have been entered into computer files, but only a fraction of Hale's 1966 material or texts collected by Laughren and others have been prepared in this way.

We have been fortunate in having access at M.I.T. to state-of-the-art expertise on word-processing on main-frame computers. Facilities include a flexible text-editing program, large disk storage space, high-speed high-quality printers and numerous time-sharing terminals. Since March 1982, the project has had its own computer terminal which communicates with the M.I.T. computers on a telephone line. We make much use of the Emacs text-editor program, which runs in the Lisp language on the MIT-Multics system and in Teco on the TOPS-20 system MIT-Speech. Not only is it a powerful text-editor, but specific text-processing tasks can be custom-designed through 'extended commands' written by the user in Lisp. Since early 1982, we have also had use of the more powerful Zemacs editor, which runs in the Zlisp language on Lisp Machines produced at Symbolics, Inc.

#### 10. CONCLUDING REMARKS

The aims of the Warlpiri dictionary project are many. We hope that the dictionary will provide a deep insight into the Warlpiri lexicon while showing the links between the lexicon and the syntax of the language. Depending on the value of this fairly pioneering venture, we feel that it could provide some sort of a model or working base on which dictionaries of other Australian languages, in particular those of Central Australia, could be constructed. Even more ambitiously, it could provide a more rigorous model for dictionary-making in general.



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## APPENDIX: COMPUTER TYPESET ENTRIES

**PAKA-RNI (V): 1. Contact/effect: xERG produces concussion on the surface of yABS, by some entity coming into contact with y:**

(a) x is active: *hit, strike, bump, crash into, slap, kick, knock, whip, run into, beat, thrash, thresh.*

*Turakirli puluku wirijarlul pakarnu parnkanjakarrarlul.* The moving car hit a big bullock. *Rdakangu wirriya pakarnu kapirdinyanurlul.* His big sister hit the boy with her hand. *Purlja kalalu pakarnu wirliyarlu.* They used to strike the hair-string ball with their feet. *Mukakilpapala pakarnurra, pakarnurra...* *Kala mukakilpapala wayipurrurnu.* They threshed the branches of the native plum and continued threshing them. Then they gathered up all the plums. *Kajilpa yapangu wirliyarlangurlul palka-mantarla yuruturla – murdukayijangka pakarninjawarnu – marlu, ngula kajikanyanu kuyulku manirra.* If someone on foot for example, finds on the road a kangaroo run over by a car, then he can take off the animal for himself. *Kutururlul kalunyanu pakarni karntanguju – mimayirli.* The women are hitting each other with wooden clubs out of jealousy. *Watingki kalunyanu pakarni karlingki kulungku.* Men hit each other with boomerangs in anger. *Kurdukari pakarnu jurru watiyakurlurlul kurdu yangka minjirparlu.* That bullying child hit the other child with a stick. Cf. KATI-RNI, LUWA-RNI, NGA-RNI 3, PANTI-RNI, PI-NYI.

•CON(ATIVE): xERG moves towards yDAT [DD] with intention of producing effect (as in 1(a)): *to take a swing at, hit at, strike (out) at.*

*Malikikirlajinta pakarnu watiyarlu wirriyapardurlul.* The boy tried to hit the dog with a stick. *Pakarnujurlul kulungku.* She tried to hit me in anger.

•EFF(ECT). xERG hits (PAKARNI 1(a)) yABS thereby producing an effect zALL. predicated of y: *to hit to/till, hit and make somehow.*

*Karnta pakarnu watingki yalyukurra.* The man hit the woman and made her bleed. *Nyurnukurra pakarnu tarnnga.* He beat him to death. *Tarnngakurralul pakarnu nyurnukurra.* *Marlajajana palija yapapatukuju yalumpurlajuku yuntangka.* They beat him to death. He died right there in the shelter as a result of those people.

•OBTAIN: xERG obtains yABS from zEL by hitting (PAKARNI 1(a)) z: *to thresh and get out of, get from by hitting/threshing.*

*Palyalungalpa marnajangka pakaka!* Thresh us the gum out of the spinifex.

• KILL RULE: xERG, being, finds (see PALKA-MA-NI) yABS, being, typically after searching (see WARRI-RNI) for y and renders y lifeless (NYURNU 2) typically by hitting (PAKA-RNI 1(a)) y: *to hunt and kill, kill.*

*Kuyu wardapipala jarnku pakarnu karntajarrarlul.* The two women both killed goannas. *Kuyu marlu kalu watingki pakarni nyampuwaringkirli.* The local men hunt and kill kangaroos. *Kuyukupurdalku karna yani.* *Kuyu yilparnaju pakakarla miyijangkarlu liwirparlu.* I'm off to hunt for some game. I must kill some animal as I'm meat-starved from only having vegetables and fruit. Cf. KATI-RNI, LUWA-RNI, PI-NYI.

(b) x is inactive, typically an inanimate rigid entity as tree, doorframe, wall etc. and y is typically a being in motion. x is typically unmentioned; reference is to the effect of concussion on y: *to bump, knock.*

*Jurruju pakarnu – yirna nganta yuwarlirla yukayarlara.* I bumped my head (lit. it struck my head) as I was about to go into the house.

2. xERG cuts (PAJI-RNI) yABS, typically wood, tree (WATIYA) by forcefully manipulating some sharp edged instrument (zERG), typically an axe: *to chop, cut.*

*Warlkurrurlul ka pakarni warlu.* He is chopping fire-wood with an axe. *Wardiji wiri watiya, rdilyki-pakarni karnalu, ngulanya karnalu pampi tiirl-pakarni.* *Pakarni karnalu pampi.* Those big mulga trees, we chop them down, then we split them in half, we chop them in half. *Karlingardungardu karna murrumurru-jarri.* *Yingaju warlungku*

*marda wiringki katernu. Manu watiya yangka wiri — pakarninjarla yirna kangurnu jimantarlu -- ngulajuju karlingardungardu katernu.* My shoulder blade is aching. Perhaps it's because of that big piece of fire-wood that weighed me down. That big piece of wood which I chopped down and then carried on my shoulder -- it pressed down on my shoulder-blade.

•SOURCE: xERG produces yABS by chopping (PAKA-RNI 2) some entity (zABS), the material source of y:*to chop out, cut out, hew out.*

*Karli kalu pakarni manja.* They chop wood for boomerangs from mulga trees. *Pikirri, wardiji wiri watiya — rdilyki-pakarni karnalu, ngulanya karnalu pampi tiirl-pakarni. Ngurruju-mani karnalu, rdukulku-manilki karnalu nyanunguju pikirri, witaralku mani karnalu yangka wakirdi, ngula karnalu yalikirra narra yirrarni.* A spear-thrower, it is from that big mulga tree that we chop down and split it. We make it, we gouge out the middle of that spear-thrower and we then whittle it down to a point at the end where we attach the hook.

•TRANS(FORMATION) RULE: xERG, human being, transforms some entity, typically wood (WATIYA) so that it assumes a desired state or form yABS, implement (JURNARRPA), by chopping (PAKA-RNI 2) said entity:*to fashion into, chop into.*

*Ngirtirlipanyanurla kurlardaku pakarnirra.* Let's fashion (i.e. by chopping) the butt end of our spears. *Warlkurruju yungka, yungarnaju puju pakarninjayani.* Give me the axe so that I can cut myself some footholds (as in trunk of tree). Cf. JARNTI-RNI, PIRRKI-RNI.

•OBTAIN RULE: xERG obtains yABS, entity internal to some other entity (zCOIN.) by chopping (PAKA-RNI 2) the latter entity and in the process separating y from that entity:*to chop out of.*

*Jurlardarnalu pakarnu.* We chopped out a native bee hive (to get the honey). *Yapa yalirli pakarninyarra — palka karna nyanyi — pama marda ka pakarni jurlarda.* That person is chopping over there. I can see him -- he is perhaps chopping out sugar-bag.

•GOAL DATIVE: xERG chops some entity (PAKA-RNI 2) in order to come to be at the same place as yDAT and to act on y in some manner: *to chop for, chop to.*

*Kalarnalurla watiya pakarnu janganpaku mayingkarlu* We used to chop trees with an axe to get possums.

3. xERG pierces (PANTI-RNI) yABS, typically the ground, by forcefully manipulating some sharp ended instrument:*to pierce, dig, thrust into, stick into.* *Kujakalu yangka rdakurlangu pangirni, yapangku, ngulakalu pikingki pakarni.* When people dig holes for example, they pierce (the ground) with a pick. *Ngapakulku pakaka! Kutu kapurlupa palka-mani.* Dig it in now to see if there's water. We'll find it close (to the surface). Cf. PANGI-RNI, PARRKA-RNI.

4. xERG paints (MAPA-RNI) yABS:*to paint, put on, apply, smear with.*

*Jintawarlayi-jarrinjarlalkulpalunyanu karlijiji kujurnu. Pakarnulpalunyanu karrwarawararu karljingki. Yawuu! Karljingki yungulpalunyanu pakarnu — namurnamunyayirni yilpalu nyinaja yijardunyayirni.* Having assembled, they put white pipe-clay on each other. They painted each other with stripes of white pipe-clay. Yes indeed, they painted each other with white clay -- they were truly perfect. Cf. PIIRL-PAKA-RNI, PUNTARRKU.

5. IDIOM. xERG, being, fills self [REFL] by eating/drinking (NGA-RNI) yERG, large quantity of food or drink: *to fill oneself with, stuff oneself with, have one's fill of, gorge oneself on.*

*Walingkinyanu kuyungku pakarnu.* The man had his fill of meat. *Pamangku kapurnaju jalangurlu pakarni.* I'm going to have my fill of grog today.

6.IDIOM.xERG moves along a path towards yDAT [DD] in order to be at same place as y:*to try to catch up with, try to reach.* (§CONATIVE).

*Purdangirlikarinarlajinta pakarninjayanu mutukayikirliki.* I tried to catch up with him but his car was too fast. Cf. PURA-MI, YA-NI.

7. IDIOM. xERG, typically man, performs ceremony yABS by moving along a path in a stylized manner usually involving a high stepping movement of legs and forceful stamping of feet:*to dance, perform (corroboree).*★ Only men and boys are said to PURLAPA PAKARNI.

*Watipaturlu kalu purlapa pakarni jalyirrpakurlurlu manu kuruwarrikirli.* The men are dancing decorated with leafy branches and with painted designs. Cf.KATI-RNI, PI-NYI, PURLAPA, WIRNTI-MI.

8.IDIOM. xERG, initiated man (NGARRKA), performs ceremonial actions for the benefit of yABS, male human previously uninitiated, at circumcision ceremony (KURDIJI-RLA):*to initiate, circumsize, make man.*

*Nyarrpararlangkulu pakarnu kurdijirla?* Where did they initiate you? Cf.KURDIJI 2.

9.IDIOM. xERG,head cold/influenza (MIIRNTA) causes yABS, being, to be ill (NYURNU):*to have a cold, have the flu, be stricken with cold/flu/pneumonia/bronchitis.*

*Kuntulparlu kurdu wita pakarnu.* The baby has a cold.(lit. The cold has struck the small child.) *Miirntarluju pakarnu.* I have a cold. Cf. PI-NYI #.

See preverbs: JAARN-, JAWIRRI-, KILYKILY-, KINKI-, KIRTIRL-, KUURNKU, KUWARRI-, LARRA-, LAARR-, LURLURL-, MUNU-, MURRULL-, MURUL-, NARNTIRN-, NGANJINI-, NGANJINY-, NGIRIRNGIRIRR-, NGURRGULY-, NYAMPIRL-, NYULYU-, NYURNNGARR-, NYUURR-, PAKURR-, PARNNGURR-, PALJU-, PANGKUL-, PARNNGURR-, PARNTARR-, PARRI-, PARRMIRNINY-, PIIRL-, PILJARR-, PIMPALY-, PIRLTALY-, PURRPU-, RDAALY-, RDILYKI-, RDIIRR-, RDUNGKURR-, TAARLTAARL-, TARLARLTARLARL-, TIIRL-, TIYINKI-, WAPIRDI-, WAARR-, WIILY-, WILPINY-, WURRKURULY-, YAARL-, YAWIRR-.



SEMANTICS AND LEXICOGRAPHY:  
SOME COMMENTS ON THE WARLPIRI DICTIONARY PROJECT

Anna Wierzbicka

1. INTRODUCTION

The Warlpiri Dictionary Project is extremely impressive. The dictionary is clearly going to be superior, in a number of ways, to most other comparable dictionaries. The criticisms in this paper apply to most other dictionaries even more than they do to the present one. They are offered not as criticisms, but as suggestions that might be useful in the further work on a project which is of enormous importance, both from a scholarly and a social point of view.

2. AIMS OF THE PROJECT

The Warlpiri Dictionary Project faces a difficult dilemma. Should it above all produce a scholarly work or a practical reference book? Should it offer definitions which would reveal the real semantic structure of the words defined, or definitions which would be intelligible and therefore useful to the largest possible range of users? Should it aim at 'God's truth' or at practically useful approximations?

The dictionary will probably be judged from both these points of view at once. If it fails to capture the cognitive world reflected in the meanings of Warlpiri words in an accurate and revealing way, it will be a disappointment. If it captures that world accurately and revealingly, but does so through formulae which are intelligible only to specialists, it will also be a disappointment. Difficult as it may be, the dictionary must aim at both goals at once; it must strive for both God's truth (which in this case is the truth about the cognitive world of the Warlpiri, in an unadulterated form), and also for wide accessibility and potential utility for non-specialists of different cultural and educational backgrounds.

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We may ask if it is humanly possible to reconcile these two orientations. My contention is that it is possible to a much higher degree than is generally believed, in particular, than is apparently believed by the authors of the dictionary themselves. Once both goals, the theoretical and the practical one, are clearly stated, and the over-all task (to try to meet both these goals at once, as far as possible) is formulated, many specific problems start to emerge.

### 3. PROBLEMS OF DEFINITION

Consider the following extracts from the definitions to be found in the preliminary version of the dictionary:

*jipirri* - 'acting in unison to affect some entity';

*lakarn-luwa-rni* - 'xERG causes some outer part of yABS to be separated from y by striking with a missile';

*liji-yirra-rni* - 'xABS is desirous of having yDAT';

*lirri-mi* - 'xABS increases in size, typically to assume abnormal dimensions';

*maya* - 'to an extent exceeding that existing at some reference time'.

To many unsophisticated readers, expressions such as 'in unison' or 'be desirous of' or 'assume abnormal dimensions', or words such as 'missile' (here in the less-familiar sense of 'something thrown') will be obstacles and/or irritants: couldn't simple, intelligible words such as 'together', 'throw', and 'want' be used instead? Can't one say 'X gets bigger than it should be' instead of 'X increases in size, assuming abnormal dimensions'? Can't one say 'more than before' instead of 'to an extent exceeding that existing at some reference time'?

But perhaps there are some higher theoretical reasons why those potentially incomprehensible expressions should be used in preference to simple, ordinary ones. I confess I can see none, and I suspect there aren't any. I would say that from a theoretical point of view, as well as from a practical one, 'want' is preferable to 'desirous', 'together' to 'in unison', and 'a thing thrown' to 'a missile'. There is no theoretical justification for the common lexicographic practice of filling statements of meaning with learned, obscure and scientific-sounding words rather than simple and basic ones; quite the contrary. The basic criterion of scientific adequacy of a definition was formulated twenty-five centuries ago, by Aristotle: a definition must reduce what is complex to what is simple, what is obscure to what is clear, what is conceptually 'posterior' to what is conceptually 'prior' (cf. also Boguslawski 1966, Weinreich 1967, Apresjan 1972 and 1979, and Wierzbicka 1972, 1980 and forthcoming). To achieve such reduction to a simpler level is difficult, much more difficult than to create the illusion of analysis through the use of learned words of Latin origin. If in any given case, the lexicographer (who is only human, and whose time is limited) cannot achieve analytic reduction (at least not in the time available), then it is better that he or she should simply admit this fact rather than conceal it behind a facade of 'scientific' language.



As a further example, consider the following definition:

*paka-rni* - 'xERG produces concussion of surface of yABS, by coming into contact with y'.

I wonder how many users of the dictionary would guess what this definition is really supposed to mean? Luckily, an example shows how the mysterious and incomprehensible concept in question is really used: 'the little boy tried to hit the dog with a stick'. It turns out that the word in question simply means 'hit!' 'Concussion' is not theoretically preferable to 'hit'. On the contrary, 'concussion' is more complex than 'hit', and to define 'hit' (explicitly or implicitly) via 'concussion' must lead to a vicious circle.

It is true that simple everyday words such as 'hit' are often ambiguous, whereas scientific words such as 'concussion' tend to be less so. However, the word 'concussion', as used in the definition quoted above, is ambiguous, and in fact mystifying, because it is not used in its normal sense ('brain injury of a kind that occurs when a person's head hits against something very hard'). Secondly, we understand 'concussion' in terms of 'hitting', anyway. Thirdly, examples such as 'the little boy tried to hit the dog with a stick' make the intended meaning of 'hit' quite clear. Finally, if the dictionary compilers are eager to attempt to define 'hit', they are, of course, welcome to do so (although it is difficult and, I think, unnecessary from their point of view); but a pseudo-definition in terms of concepts more complex than the one defined, does not constitute such a bona fide attempt. It is as pointless and counter-productive from a theoretical as it is from a practical point of view.

Another example is:

*larra-paka-rni* - 'xERG strikes yABS thereby producing a linear separation in the material integrity of y, typically by means of a bladed instrument'.

Again, I invite the reader to imagine the reaction of an average dictionary user, such as a school teacher, a teacher aide or a high school student to this definition. Luckily, an example shows what is really meant: 'Both of them seized an axe. Each one split open the head of the other'. Again, it might be argued that the difficult formula 'a linear separation in the material integrity of an object' is needed to serve a theoretical purpose. But what theoretical purpose? If a simple word like 'split' has to be defined at all, there is surely still no need to appeal to obscure philosophical concepts such as 'material integrity of an object'; instead, one can say simply 'x strikes y, causing some parts of y to become separated from others, looking as if there was a line between them'.

In trying to avoid simple, 'naive' language and in attempting to define words which perhaps do not need definitions, the authors of the dictionary run the risk of committing the gravest and the most common sin of a lexicographer: the sin of circularity. Admittedly, they usually commit it only in a hidden form; since they don't define 'concussion', the circularity involved in defining a Warlpiri word which means 'hit' in terms of 'concussion' remains hidden. A similar case of hidden circularity is provided by the following definition:

*nya-nyi* - 'xERG perceives image of yABS, by means of eyes' gaze coming into contact with y'.

Clearly, what the authors are trying to define here is the concept of seeing. But the word 'gaze' is semantically even more complex than 'see'. A definition of 'see' via 'gaze' is a pseudo-definition.

It seems to me that in a dictionary such as this, decomposition should be used as a means to an end; it should give an accurate rendering of the meaning where no monolexic English equivalent is available, and thus explain the Warlpiri concept to the user of the dictionary. A great effort should be made to capture the semantic invariant correctly and to state it in simple language. When simple English equivalents are available, decomposition is not necessary, especially decomposition carried out using complex, technical or obscure terms.

#### 4. TECHNICAL-SOUNDING DEFINITIONS

The use of scientific, technical and learned language in definitions is also misleading and empirically inadequate, for a number of reasons. In particular, it often introduces unintended false presuppositions. An example is:

*lalka* - 'of entity, being, which ceases to be pliable; solid, hardened, stiff, firm, frozen stiff, frozen solid, congealed.' (e.g. 'Put me near the fire, the cold has frozen me stiff'.)

The long list of possible translation equivalents, as well as the examples given, make the meaning in question quite clear. They correct the false clue given in the definition itself, in the form of the word 'pliable'. People and animals may get 'stiff', but they neither become nor cease to be 'pliable'. The simple word 'stiff' is free of the unfortunate presuppositions of the more technical word 'pliable'. If this is so, then we may ask why the word 'pliable' is used in the definition at all. One further instance is:

*wipi-mi* - 'xABS is in a position such that a part or parts of x radiate out from the main body of x; stick out, radiate out (e.g. to stretch out leg, arm, finger)'.

Why is 'radiate' given in the definition here? Heat may radiate from a radiator, but do legs, arms or fingers radiate from a body? 'Radiate' is not only more technical and learned than 'stick out', it is also empirically less suitable, because it introduces false presuppositions.

A similar problem arises with:

*panti-rni* - 'xERG produces indentation or puncture in yABS by coming into contact with y'.

Reading the words 'indentation' and 'puncture', the user would assume that the verb in question is used to refer to metal surfaces and to tyres. Imagine his surprise and confusion when he comes to the examples: 'The man speared the kangaroo' 'The horse kicked me in the stomach'. Is it usual to speak of punctured kangaroos and indented stomachs? A definition phrased in simple language avoids the misleading presuppositions: 'x causes a pointed thing z to move and to come into contact with y so that the pointed part of z starts to be inside y'.

It should be added that technical or simply pompous language in definitions leads to many different kinds of empirical inadequacy; false presuppositions about denotata constitute only one possibility. Consider, for example, the following definition:

*jinyi-jinyi-ma-ni* - 'xERG causes yABS to act in manner desired by x'.  
e.g. 'I will order the child to go and get the water.'

The examples given suggest that in fact it is not a question of acting in a certain manner, but simply of doing what someone wants us to do. (The relevant thing is *what* one does, not *how* one does it.) A definition phrased in simpler, more 'naive' language ('x causes y to do what x wants y to do') reflects the meaning more accurately than one in more stilted phrasing.

Furthermore, simpler language helps achieve a certain vagueness in definitions, which is often necessary in portraying concepts encoded in natural language. A more or less scientific language often introduces excessive precision, which in fact distorts the nature of natural language concepts. An example is:

*lirrki-lirrki-nga-rni* - 'xERG eats yABS causing the characteristic attached covering particles (flesh) of y to partially or totally diminish in quantity'. e.g. 'The dog ate the bone bare of flesh.' 'Lice nibble away at a person (head of).'

To begin with, the word 'particle' is unsuitable and misleading (human flesh is not normally thought of as composed of particles). The simple word 'part' is much more suitable. The phrase 'partially or totally diminish in quantity' is even more unfortunate: 'partially diminish' is a tautology, and 'totally diminish' is a contradiction. Both the tautology and the contradiction could be removed by the use of simple, 'naive' language, along the following lines: 'x eats outer parts of y, causing y to cease to have outer parts that things of this kind normally have.' At a more idiomatic level, one could say simply 'x eats away outer parts of y', and I think even this simplified formula would be preferable to the scientific-sounding definition quoted above. It is true that a formula of the kind suggested here does not make it absolutely clear that the outer parts may be eaten away either partially or totally. But this loss in precision represents a gain in semantic adequacy. (Lexicographers are often tempted to 'improve' the concepts which it is their job to define - to make them 'more logical', 'more precise', 'more scientific'. But of course real precision in lexicographic work lies elsewhere: in the accuracy with which the imprecise concepts of natural language are portrayed.)

## 5. THE INTRUSION OF SCIENCE

The traditional aversion of lexicographers to simple language and the (subconscious) desire to sound scientific often leads to an intrusion of science into dictionary definitions. The Warlpiri dictionary project is no exception in this respect, and the intrusion of science - Western science - into definitions purporting to portray an Aboriginal cognitive world is particularly jarring.

A few examples will illustrate this point. Consider firstly:

*liirl-nyina-mi* - 'xABS reflects light: shine, glow, glisten, sparkle'  
(Cf. Webster's definition of 'shine': 'to reflect or to emit light').

Can we say that ordinary speakers of English think of shining in terms of reflecting or emitting light? Do the Warlpiri? Granted, the concept of 'shining' is difficult to explicate, but is there really any need to do so in a Warlpiri-English dictionary, if the English word 'shine' seems to be an adequate equivalent of the Warlpiri word? And if the authors of the dictionary insist on doing so, they should try to capture the speakers' viewpoint rather than the Western scientists' theory of the phenomenon in question.

A second instance is:

*liwanja* - 'vertebrate cold blooded animal living in water in sand: fish'

Do Warlpiri speakers view fish as 'vertebrate cold blooded animals'?

A final example is:

*jirri-ka-nyi* - 'xERG, being, causes yABS, being capable of self-propulsion, to move along the same path as x by taking hold of y, typically by the hand'.

Fortunately for the user, a more practical definition is also offered: 'to lead by the hand'. But is it the case that the supposed 'theoretical' definition is really theoretically superior to the practical one? Firstly, why use the words 'capable of self-propulsion'? Why not simply say: 'which can move by itself'? Secondly, are there any animate beings that are not capable of 'self-propulsion'? Thirdly, isn't the word 'being' slightly amusing in contexts such as 'A mother takes her little one by the hand' or 'They lead blind people around by the hand'? The normal English word for an unspecified person is 'someone' rather than 'being'. It is very easy (for me, and presumably for most other users of the dictionary) to think of a mother or a child as of 'someone', it is more difficult to think of them as of 'self-propelling beings'. I suggest, then, that if a definition of the word *jirri-ka-nyi* in terms other than 'to lead by the hand' is needed at all, it should start with 'someone (x) causes someone else (y) to move ...', rather than with 'x, being, causes y, being capable of self-propulsion, to move ...'.

## 6. CONCLUSIONS

Let me reiterate the main point. I am not arguing that the definitions in the Warlpiri dictionary should aim at practical advantages rather than at high intellectual standards; that they should use simple, naive language as a concession to the users, in preference to a truly adequate semantic metalanguage, accessible to specialists. I am arguing that the whole alternative is false. The Warlpiri dictionary must aim at the truth, at empirical adequacy, at the highest possible scholarly standards. I am arguing that *in doing so* it will also become more useful, more widely accessible and more practical, than a compendium written in a complicated, technical and obscure language.

It is true that truly simple and rudimentary 'basic language' may be unfamiliar and even shocking to the educated reader. Some educated readers will no doubt be put off and offended by simple, naive-sounding language in a scholarly work - they may cling to the more complex and more esoteric language as privileged castes usually cling to their privileges and status symbols. But a lexicographer should not give in to the prejudices and pressures of a bad tradition - he or she should struggle against them as much in the name of semantic truth as in the name of social utility or cultural relevance.

In a great enterprise such as the Warlpiri dictionary project, insight should never be sacrificed to practical expediency. The current version of the dictionary does contain many concessions to the mentally inert reader, alongside the many unnecessary obstacles. I would argue against both. In particular, long lists of English translation equivalents may seem to be more useful to the reader, and less demanding, than painstaking definitions. In fact, however, lists of this kind cannot be regarded as a valid alternative to definitions. If the meaning of a given Warlpiri word can be indicated by means of one simple English equivalent (for example, *lan* 'afraid'), then I think there is nothing wrong in saying just that, without necessarily attempting a definition. A long list of quasi-synonyms ('in fright, frightened, scared, in fear') should be dispensed with. If, however, a long list of English translation equivalents seems to be needed because none of the 'equivalents' is really equivalent in meaning to the Warlpiri word, then a definition is necessary - even if the definition requires greater effort on the part of the dictionary user.

For example, the word *nyurunyuru-jarri-mi* is glossed as follows: 'to hate him, despise him, be jealous of, disapprove of'. I presume that the invariant meaning behind these different glosses can be captured by the following formula: 'to feel bad feelings towards someone'. Despite the great simplicity of the words used in this definition (and partly because of it), it may be more difficult to 'take in' than the list of alternative glosses offered in the current version of the dictionary. Yet this list of alternative glosses fails to capture the invariant meaning of the Warlpiri word and as a consequence, it is inadequate. To leave it in the dictionary in preference to a simple but unfamiliar-sounding definition on the grounds that it would be easier for the ordinary reader to 'take in', represents in my view an unjustifiable concession to the reader's inertia. The reader can be expected and required to make a mental effort whenever it is necessary to discover the real meaning of the word defined; he or she should not be expected and required to cope with complicated and obscure language when this language is not necessary and when, in fact, it obscures the semantic structure.

Consider also the following example:

*japi-japi* - 'entwined, twisted around, folded up, folded under, rolled up, closed up.'

When this is combined with a number of examples, the list of English 'equivalents' is suggestive and may satisfy the reader. Nonetheless, it is clear that this list does not show what the Warlpiri word really means. It fails to capture the invariant. If we do make the effort needed to extract this invariant, we will perhaps state it, roughly, as follows: 'x's position is such that both its ends are close to one another'. To people used to conventional dictionaries, unconventional potential translation equivalents. If the authors of the dictionary want to compromise, they can, of course, offer the reader both a definition and a list. But a list without a definition is not enough: the Warlpiri concept in question has not been captured.

One last example is:

*linji* - 1. 'emptied of inherent moisture: dry, ripe, cooked, burnt, dried out, dessicated, dead (of a plant); 2. of person covered with dust and of disheveled appearance: dusty, dirty, unkempt, disheveled'.

Here, two different meanings are postulated, but neither of them is stated: each of the two meanings is merely hinted at by means of a long list of possible translation equivalents. These translation equivalents, however, are so different from one another, that the reader does not really have a hint of what the two invariant meanings really are, or how they are related. The examples offered suggest that in fact these meanings can perhaps be stated as follows: 1. 'x was changed because it had been for a long time in the heat'; 2. 'x was changed because it had been for a long time in the heat, it looked bad because of that'. These two definitions, which spell out concepts unfamiliar to native speakers of English (because in English they have not been lexicalized), may indeed be more demanding for the reader than two lists of ready-made translation equivalents. But, of course, cross-cultural understanding can never be achieved without a mental effort. Two lists of apparently disparate translation equivalents are misleading to the reader, in suggesting that the Warlpiri word in question has no underlying conceptual unity. To reveal that underlying conceptual unity, a definition must be given. A list of ready-made translation equivalents may be less demanding, but it is also much less illuminating.

Another, related, issue is that of standardization versus idiomaticity. Consider first the following three definitions:

*wangka-mi* - 'xABS produces sound (...)'

*waarr-paka-rni* - 'xERG strikes yABS (typically head of x) and emits a loud wail'

*wuyurr-wangka-mi* - 'xABS makes sound (...)'

It appears that the three verbs 'produce', 'emit' and 'make' are meant to express exactly the same meaning (causation of a sound) in each of the three definitions. In a standardized semantic metalanguage, there is no room for elegant variation, and the same meaning, whenever possible, must be expressed

in the same way. (Hence the usefulness of versatile rudimentary words such as 'want', 'cause', 'do', 'feel' or 'bad'.)

In general, however, the Warlpiri dictionary project does make an effort towards standardisation of the language of its definitions. Words such as 'cause', 'entity', 'being', 'contact', 'move', 'self-propulsion' or 'perceive' are used very frequently in the definitions, witnessing an awareness on the authors' part that the same meanings should, as far as possible, be expressed in the same way. From this point of view, the Warlpiri project differs very favourably from most other comparable dictionaries. What is lacking is a similar effort towards simplicity of language. Simplicity of language is the best guarantee of its successful standardization. For example, an expression such as 'material integrity' is not only difficult to comprehend, but also deficient from the point of view of standardization: since the word 'part' will reduce not only the obscurity, but also the unnecessary variation in the language of definitions.

In lexicography, there is no real conflict between insight and rigour, as there is none between 'God's truth' and public good. Stylistic variation may have to be sacrificed and conventions of respectable educated language may have to be dispensed with. But the concepts encapsulated in the words defined can be stated accurately, revealingly and intelligibly at the same time.



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A NOTE ON ANNA WIERZBICKA'S COMMENTS ON  
THE WARLPIRI DICTIONARY PROJECT

Mary Laughren

In replying to Anna Wierzbicka's comments on the Warlpiri Dictionary Project in this volume, I do not want to touch on all the points raised, but rather concentrate on one point which I feel is of fundamental importance where the view of Wierzbicka appears to differ considerably from that of the co-authors of the Warlpiri Dictionary Project: the notion of simplicity in language and the appropriateness of kinds of metalinguistic terminology.

The definitions of entries in the Warlpiri dictionary try to uncover and display the semantic content of an item and the relation between that item and other items with respect to that semantic content. If we examine verbal predicates, it is clear that verbs belong to natural classes with respect to their meaning and their diathesis. Thus, a verb such as *paka-rni* 'hit' (cf. Laughren and Nash, this volume), cited by Wierzbicka, belongs to a class of verbs whose core meaning we define as follows:

1. xERG produces an effect on yABS by some entity coming into contact with y. ('Entity' in our metalanguage refers to any referent in the real world. Entities can be divided into beings, non-beings and so forth.)

In Warlpiri each verb of this type, which we have labelled 'contact/effect', can be classified into one of two subclasses:

- (a) x causes some entity (zERG) to come into contact with y. (z is predicated of x by a redundancy rule.)
- (b) x is some entity which comes into contact with y.

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In some cases (b) divides into two further subclasses (i) and (ii):

- (i) x is active.
- (ii) x is inactive.

Some morphologically simple verbs which belong to this class are *jarnti-rni* 'scrape, sculpt, carve, scratch', *jiti-rni* 'cause to be/feel, provoke', *kati-rni* 'trample, press on, weigh on, tread on', *kipi-rni* 'winnow', *larrji-rni* 'scratch, claw', *luwa-rni* 'hit, pelt, knock, strike', *maja-rni* 'straighten', *paji-rni* 'cut, carve, sever, bite, pick, break', *paka-rni* 'hit, knock, thresh, chop', *pangi-rni* 'dig, scratch', *panti-rni* 'pierce, poke, stick into, spear', *parlji-rni* 'wash', *pi-nyi* 'hit, knock, bite, fight, attack', *tirlarri-rni* 'split', *tirlpi-mi* 'flake', *turlka-mi* 'pinch', *walji-rni* 'pluck, pull out', *wari-rni* 'entwine, wrap around, tie around', *yarli-rni* 'wet, dampen', *yarlki-rni* 'bite, sting', *yipi-rni* 'squeeze out', *yirnti-rni* 'knock down, topple over, capsize, blow over, jostle, push, shove', *yurpa-rni* 'grind, crush'.

While 1. above defines the core meaning of the 'contact/effect' class, the additional elements of meaning which distinguish the verbs which are members of this class, relate to the core with respect to the nature of the effect (such as concussion, pressure, puncture, cleaning), the nature of the entity which comes into contact (such as sharp pointed, water, entity moves through the air, sharp edged) and the nature of the contact (such as concentrating on one point on y, linearly oriented over surface of y).

These 'contact/effect' verbs differ from a class of verbs we call the 'contact' verbs such as *jampi-rni* 'lick', *marnpi-rni* 'touch, handle', *nyunji-rni* 'kiss'. The latter do not contain as part of their meaning an effect clause. The common core meaning distinguishing this class is given in 2.

- 2. xERG, being, comes into contact with yABS, by causing some part (specified) of x to come into contact with y.

The difference in meaning for each verb is derived from the bodypart specification in its entry (for example, in the definition of *jampi-rni* 'lick', xERG comes into contact with yABS by causing *tongue* to come into contact with y; in the definition of *marnpi-rni* 'touch, handle' it is the *hand* of x; in the definition of *nyunji-rni* 'kiss' it is the *mouth* of x).

Another class of verbs are the 'transfer/movement' verbs, most of which divide into two subclasses: causative and non-causative. The core meanings are as follows:

- 3. (Non-Causative): xABS moves along a path (yPERLative) from some place (zELative) to another place (wALLative).

4. (Causative): xERG causes yABS to move along a path (zPERLative) from some place (wELative) to another place (vALLative).

As in the case of the other classes, the individual verbs are distinguished by elements of meaning which relate to the core, such as the relation between the starting and ending place (that is, one is higher or lower than the other: *warrka-rni* 'go upwards' as opposed to *jiti-rni* 'go downwards'; or endpoint is internal or external to some entity: *yuka-mi* 'enter, go in', *yirrpi-rni* 'put inside' as opposed to *wilypi-pardi-mi* 'go out of', *wilypi-ma-ni* 'take out of'), the speed of travel (that is, rapid speed gives the marked *parnka-mi* 'move rapidly, run' versus the unmarked *ya-ni* 'go'), the spatial relation between the arguments with respect to path travelled, starting and ending points (that is, coincidence versus non-coincidence gives *rdanpa-rni* 'accompany', *ka-nyi* 'take, carry, bring' versus *yilya-mi* 'send', *yampi-mi* 'leave').

If we define a verb like *paka-rni* by the supposedly simple English word 'hit', and *luwa-rni* by the supposedly simple expression 'hit by throwing' and so on for all the 'contact/effect' verbs, then we fail to bring out a most important generalization: these verbs are related, and they belong to a class of verbs, by virtue of having a common semantic core. We also fail to accurately define the meaning of each verb since the meaning of the 'simple' English word(s) does not fully match the meaning of the Warlpiri 'equivalent'.

For example, English 'hit' can be used in sentences such as the following:

6. (a) The man hit me.  
 (b) He hit the ball over the fence. (\*)  
 (c) He hit his forehead against the ledge. (\*)  
 (d) The idea suddenly hit me. (\*)  
 (e) At last he hit the headlines/the big time. (\*)

In those sentences followed by an asterisk, Warlpiri *paka-rni* could not be used straightforwardly to translate English 'hit'. In 6(b) one would have to introduce a transfer/movement verb to express the movement of the ball and then use *paka-rni* in another clause or in an infinitival complement. In 6(c), the diathesis whereby the patient 'he' is in subject position with respect to 'hit' is not possible with *paka-rni* as can be seen from our definition (Laughren and Nash, this volume). The metaphorical uses of English 'hit' (as in 6(d) and (e)) can under no circumstances be translated by *paka-rni*.

Conditions for the application of lexical redundancy rules should ideally fall out from the correct definition of verbal predicates, which spell out their essential lexical and conceptual elements, and the correct formulation of the rules themselves. The two should intermesh in a natural way. This is one of the main theoretical and practical aims of the Warlpiri Dictionary Project.

The Warlpiri Dictionary Project is still in its initial stages with respect to the definitions of the meanings of entries. The collection of data and its organization has been very time consuming; the organization is, however, becoming increasingly refined. Our definitions are being constantly revised and, hopefully improved, as we are able to compare greater amounts of related data. We do aim to define all words and to provide glosses or appropriate English translations. We aim for uniformity in our definitions, based on clearly stated principles.

Finally, it should be pointed out that the draft of the Warlpiri dictionary on which Anna Wierzbicka based her comments was a very preliminary one of mixed contents. Some of the entries represented elaborated definitions, glosses, examples and so forth according to the format described by Laughren and Nash (this volume) but many entries consisted of unprocessed data copied straight from the card file at M.I.T.

We will soon be circulating drafts of the dictionary organized according to semantic fields and classes and we hope by so doing to gather more fruitful comments.

## ETYMOLOGY AND DICTIONARY-MAKING FOR AUSTRALIAN LANGUAGES (WITH EXAMPLES FROM KAYTEJ)

H. Koch

### 1. INTRODUCTION

The aim of my contribution is to help dictionary-makers of Australian languages think about what is involved in the presentation of information on the etymologies of words in their dictionaries. It is hoped that this will lead to the inclusion of at least some etymological information in dictionaries that will be produced in the future.

In the next section, I survey some of the ways in which information is typically presented in dictionaries. This is supplemented by a list of etymological and comparative dictionaries (appendix). In section 3, I discuss the kinds of information that are characteristically given in an etymological entry in a dictionary. Section 4 makes some proposals as to how this might apply to dictionaries of Australian languages and suggests reasons why such information should be included in Australian language dictionaries. The final section presents and comments on a sample of Kaytej etymologies. This section is meant to explore and illustrate the format for presenting Australian etymologies.

### 2. ETYMOLOGY AND DICTIONARY-MAKING

While it is true that etymological information may be presented in a number of types of scholarly work, for example, in an article or book on the historical-comparative phonology or grammar of a particular language family, or in a special article devoted to one etymology<sup>1</sup>, my concern here is only to discuss how such information can figure in dictionaries. The first question to ask is: in what kinds of dictionaries may etymologies be found?

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## 2.1 Etymological Dictionaries

Etymological dictionaries are specialised dictionaries whose primary function is to present information on the history and origin of the words that are listed. The scope of an etymological dictionary may be either a single language or a language family. The latter type are intended for use primarily by comparative linguists. The former are for anyone who is interested in the origin and/or history of any item of the vocabulary of the language in question, for whatever reason.

Etymological dictionaries exist for the Indo-European family and its sub-families: Romance, Balto-Slavic, Slavic, and Indo-Aryan; for the Dravidian family; Uralic and its sub-family Samoyed; Kartvelian or South Caucasian; Turkic; Altaic and Polynesian. (The functions of an etymological dictionary of Semitic are partially served by Cohen 1970.)

The material may be arranged alphabetically according to the forms in the proto-language, either as reconstructed (c.f. the dictionaries for Indo-European and Balto-Slavic), or as attested in a written source, in cases where the proto-language is virtually identical to an older written language, as is Latin for the Romance languages, or Sanskrit for the Indo-Aryan languages. In some etymological dictionaries, the entries are arranged alphabetically by one modern language where possible: Finnish for Uralic, Tamil for Dravidian. Then, where the lead language lacks a cognate in the set being compared, the headword is taken from the next language in the usual order of citation of the cognates. Etymological dictionaries of language families, and sometimes of individual languages, may include an alphabetical index of all words cited, organised according to language.

Etymological dictionaries of single languages are more plentiful, and are in fact found for the majority of European languages, including major languages like English, French, German, Russian and also minor languages like Breton, Albanian, Armenian, Sardinian, Lithuanian, Icelandic (the last two being important to comparative Indo-European linguistics because of their relative conservatism); ancient languages like Greek, Latin, Gothic, as well as modern languages; non-Indo-European languages like Finnish, Hungarian, Turkish, as well as Indo-European ones. Without doubt, more etymological dictionaries are found for Indo-European languages (including its Indo-Iranian branch) than for any other family, and within Indo-European, the Romance and Germanic sub-families are best supplied with etymological dictionaries. For further details, see the appendix.

This single-language type of etymological dictionary usually has its words arranged alphabetically by their modern form (although Jóhannesson's work on Icelandic arranges the material alphabetically according to the Proto-Indo-European root, to avoid duplication). Some dictionaries are divided into sections according to the language(s) from which the word originates, thus presenting separately inherited and borrowed vocabulary. This is the case for Cihac, Pascu, and Hübschmann's dictionaries of Rumanian, Macedo-Rumanian and Armenian respectively. In some cases the dictionary only lists words inherited within the family, for example, Puşcariu for Rumanian, Budenz for Hungarian, Trautmann for Balto-Slavic, Horn for Persian, Morgenstierne for the Shughni Group. Collinder arranges his Uralic entries according to the antiquity of the assumed proto-language, distinguishing between cognate sets that can be traced back just to Proto-Finno-Ugric and those that go back to Proto-Uralic, with a further section on vocabulary that may be shared with Altaic.

Before an etymological dictionary can be prepared for a language or language family, it is necessary that the relevant linguistic families and subgroups be established and that the diachronic phonology of the related languages be worked out. Within Australia, there are some families where these requirements are already met. In fact, substantial lists of etymologies (nearly 500 items in each) have been included in articles dealing with the historical phonology of the Ngayarda family (O'Grady 1966) and the Kanyara-Mantharta family (Austin 1981). In both of these, the words are arranged by the proto-form (although this is usually identical to the form of the word in phonologically conservative daughter languages), but divided into groups according to the relative antiquity of the proto-language to which they can be traced, as in Collinder's Uralic dictionary.

Etymological vocabularies, if not dictionaries, could be prepared eventually for some further Australian language families (such as Paman<sup>2</sup>, Arandic). In addition, an ultimate goal of comparative Australian linguistics should be the production of an etymological dictionary for the whole Australian language family.

## 2.2 Comparative Dictionaries

Another type of dictionary is the comparative dictionary, whose function is somewhat different from that of an etymological dictionary. A comparative dictionary lists synonyms or translation equivalents across a number of languages. It is a fuller version of the type of word list used for lexicostatistical research. It may list words from a group of genetically related languages or from a number of languages in a given area.

A good example of the former type is Buck's huge *Dictionary of Selected Synonyms in the Principal Indo-European Languages*, which lists the translation equivalents of some 1100 words in 31 languages (including three historical stages of English and German, and two of Greek and Irish), organised into 22 semantic domains, and listed under an English headword. Each entry is followed by comments on the etymological relation between synonyms and on the historical semantics of the terms.

The 955-page comparative dictionary of six Slavic languages by Miklosich lists its entries alphabetically according to the Russian. Translation equivalents (sometimes two or three) in each of the other languages are given in separate columns, followed by the corresponding French and German glosses. No indication is given as to which synonyms are also cognates (but this is obvious from inspection) and cognates which are not also synonyms are not given. For Australian languages, Hale has produced an 'Arandic Word list', which is a comparative vocabulary of eight languages/dialects in the Arandic family. It contains some 350 items arranged by the English gloss within semantic domains.

The *Dravidian Comparative Vocabulary*, which compares vocabulary from five languages, is, like Buck's dictionary, organised by 22 semantic domains, with headwords in English. Its 2000 entries, however, are not translation



equivalents, but rather cognates. Where there are several different forms corresponding to a given notion, each set of cognate forms constitutes its own entry. Thus, for example, six different sets of words are given for 'blood', each attested in two to four of the languages, and three sets of synonyms for 'tooth'. Cognate words are listed even when they have undergone a slight semantic shift. For example, under 'forehead' is listed a Telugu cognate, which has shifted to 'head', and under 'tooth', the Malayalam cognate which means 'mouth of animals'. This comparative dictionary thus serves some of the functions of an etymological dictionary.

An example of an area-based comparative dictionary is Grierson's 1928 *Comparative Vocabulary* of 216 words and phrases in all the languages of India and the neighbouring countries. The ordering of words is according to semantic domain. For each English headword there is a double page listing of the translation equivalents in each of the languages, which are grouped into their respective families.

Within Australia, Menning and Nash's *Sourcebook for Australian Languages*, Part II is an example of sorts of a comparative wordlist compiled from languages in a given area, namely within 500 miles of Alice Springs. A 'basic' list of 167 words is given for each of 44 languages/dialects. The words are arranged alphabetically by the English gloss. The languages also are presented in alphabetical order. The fact that each language is represented on a different page, however, makes the book a bit difficult to use as a comparative dictionary.

It would be useful to produce more works of similar conception, using, however, fewer languages and presenting a great deal more vocabulary. Comparative dictionaries containing a substantial amount of vocabulary from a small number of languages spoken in a given area such as a town (Alice Springs, Borroloola, Roebourne) or an Aboriginal community (Maningrida, Warrabri/Alicurung, perhaps some of the Cape York Peninsula communities), could serve several useful functions. They could aid language learning by literate Aborigines and by educational, medical, or administrative personnel who are involved with Aborigines belonging to several different linguistic groups. They would, of course, be of use to comparative linguists in identifying cognates and loanwords between neighbouring languages; in other words, they would provide data for etymological study. Such a multilingual dictionary would probably be best arranged according to the English gloss. The comparative linguist might prefer an organisation by semantic domain (since then cognates which have shifted semantically would be more likely to be near to each other in the dictionary), but for most other users, an alphabetical ordering would probably be preferable.

The preparation of comparative vocabularies of language families within Australia<sup>3</sup> would be useful for the enterprise of comparative linguistics and possibly also for Aboriginal and non-Aboriginal members of the non-academic community, especially for language families in which many languages/dialects are still spoken (like Yolngu, Western Desert, Aranda, Gunwinyguan).



### 2.3 Descriptive Dictionaries

The main purpose of conventional dictionaries is to list the words in the language and describe their meaning and use. Many of them also contain information on the etymology of a word as a supplementary part of its entry. Readers will be familiar with this practice in such English dictionaries as the Oxford, Webster's, *The Macquarie Dictionary*, *The American Heritage Dictionary of the English Language*. The etymology is usually brief, and appears within square brackets at the end or the beginning of the entry.

### 3. KINDS OF ETYMOLOGICAL INFORMATION

The etymological entry, in an etymological or a conventional dictionary, traces the word back through its forms in earlier stages of the language (for example, Middle English, Old English) to its origin in a reconstructed proto-language (Proto-Germanic, Proto-Indo-European) or in another language (if it was borrowed). The ultimate source indicated may be one of three basic types. In the first place, it may be a word in an ancestral proto-language; this reconstructed source word may be cited directly and marked with an asterisk (for example *The Oxford Dictionary of English Etymology* (ODEE), gives Proto-Germanic \**grōnjaz* as the etymon of English 'green'), or it may be invoked implicitly only through the citation of cognates in related languages (for example ODEE for 'gnaw' cites Old English *gnagan* and the Germanic cognates Old Saxon *gnagan*, Old High German (*g*)*nagan*, Old Norse *gnaga*. Sometimes, only the root of the ancestral proto-word is given, but this practice is condemned by a careful etymologist like Meillet.<sup>4</sup>

Secondly, the source may be a word in a foreign language. Thus, for example, *The Macquarie Dictionary* tells us that 'sputnik' is from Russian, where it means 'companion', and *The American Heritage Dictionary* informs us that the English word 'glen' was borrowed from Scottish Gaelic *gle(a)nn*.

The third type of origin is through word formation processes (derivation and compounding) within the language. For example, *The Shorter Oxford English Dictionary* tells us that 'grazier', first attested in the year 1502, was formed from the noun 'grass', plus the occupational suffix '-ier', and that 'lord' is descended from Old English *hlāford*, *hlāfweard*, which was formed as a compound of *hlāf*, 'loaf' and *weard* 'keeper'. Sometimes we are given only the base from which a word was formed: thus the ODEE traces 'goad' to Proto-Germanic \**gaidō*, which it says is based on the Proto-Indo-European root \**ghai-*. (*The American Heritage Dictionary*, in its Appendix gives further details on the original formation of the word.<sup>5</sup>)

An etymology may include a combination of the three types of source. A word may be traced to a foreign language source and its formation in that language may then be explained. Thus, *The Shorter Oxford English Dictionary* gives the source of English 'aardvark' as Afrikaans, where it was compounded from (Dutch) *aarde* 'earth' and *vark* 'pig'. The etymology may give a foreign language source and trace the history of the word in the foreign language. Thus, *The American Heritage Dictionary* traces the word 'frail' through Middle English to Old French *fraile*, which in turn descends from Latin *fragilis*. The same dictionary traces English 'bishop' back to Old English, then through borrowing to Vulgar Latin and again through borrowing to Greek *episkopos*

'overseer', and explains that the Greek word was formed from the elements *epi-* 'on, over' and *skopos* 'one who watches'.

A word may be traceable to a proto-language, into which it was earlier borrowed from a foreign language. Thus, *The American Heritage Dictionary* traces English 'tile' back to Proto-West-Germanic \**tegala-* (West Germanic cognates are citable: cf. *ODEE*, Klein), then through borrowing to Latin *tēgula*, which is explained as a derivative of the verb *tegere* 'to cover'.

In the citation of cognates, those from the immediate family are given first, then those in more distantly related languages. Thus, for example, the *ODEE* for 'goose', Old English *gōs*, first cites the cognates in Old Firsian, Middle Low German, Middle Dutch, Old High German, German and Old Norse (giving the Proto-Germanic form), then (after giving the Proto-Indo-European form) cites the cognates from Latin, Greek, Sanskrit, Avestan, Lithuanian, and Old Irish. Sometimes reference is made to a form borrowed by another language from one of the languages in the chain of transmission of the word in question. Thus, the *ODEE*, in discussion 'goose', cites Spanish *ganso*, which was borrowed from Gothic, as evidence for a form \**gansus* of the unattested Gothic cognate.

#### 4. ETYMOLOGY IN AUSTRALIAN LANGUAGE DICTIONARIES

If we think of providing etymologies for dictionaries of Australian languages, we can see at once that they would largely lack the historical component typically found in English etymologies. There are rarely any written records attesting to earlier pronunciations or meanings of a word; however, where earlier versions do exist in wordlists such as Curr 1886, Cook's Guugu Yimidhirr word list,<sup>6</sup> or works of early observers (such as Spencer and Gillen 1899 for Aranda), these should be cited in the etymology, especially if they give evidence for a different pronunciation or meaning. Scarcity of earlier written sources also means that loan words between Aboriginal languages will be harder to identify.

In many cases, it may be difficult to decide whether a word shared with another language represents common inheritance in both languages (hence the words are cognates), or whether one language has borrowed from the other. There needs to be a way of referring to such a relation without specifying 'cognate' or 'borrowing'. Perhaps the word in the other language could be simply called a 'corresponding word in language X'; or it could be cited as 'cf. word A in language X'. Another indeterminacy arises where a word is considered to have been borrowed between two languages, but where the direction of borrowing cannot be discerned. One needs a term meaning 'was borrowed from or was borrowed into', or 'is in a borrowing relationship with'.

In giving cognates from other language families, it would be sufficient to refer to the reconstructed proto-form, provided that a reference is given somewhere to the published source where it is justified. Thus, if cognates for a Kaytej word are found in the Ngayarda family, it is sufficient in a Kaytej dictionary to cite the Proto-Ngayarda form. The interested reader can then look up the forms of the individual Ngayarda languages in O'Grady 1966, assuming it is mentioned somewhere in the Kaytej dictionary that Proto-Ngayarda forms are cited from O'Grady 1966. Where a cognate occurs in a language whose subgrouping has not yet been worked out, the cognate should obviously be cited just from that language.

It may be useful in presenting etymological information to distinguish verbally or notationally the three different senses in which a word may come 'from' another:<sup>7</sup> 'descended from' by inheritance and normal diachronic change, 'borrowed from', and 'formed from' by word-forming (derivational and compounding) processes. Clarity and space could be gained by using symbols for each of these types of derivation, for example, the symbol < could be used, as in historical linguistics, for inheritance (the opposite symbol >, 'develops into', could be used for a more recently developed variant pronunciation or meaning). The symbol ← could be used to indicate 'borrowed from' (and its converse → might be used to indicate that the word is the source, by borrowing, of a word in a neighbouring language. The symbol ↔ might be used to signal a borrowing relationship of uncertain direction). I cannot suggest a symbol to indicate word formation from existing elements in the language; in the Kaytej etymologies which follow, I use the expression 'formed from'.

The treatment of derivationally related word families raises a question of organisation: should they be listed under one headword or should each be given a separate entry? For the purposes of showing the etymological relations between the words, it is preferable to list the derivatives together, and this may be possible in an etymological dictionary. In a more conventional dictionary, however, this is less likely to be possible; nevertheless, such derivational relations can be given prominence if in an etymological entry cross-references are given to the entries for the elements which make up the words in question. Elements which have their own etymological entry, that is, headwords, could be printed in capital letters to facilitate cross-reference.

Etymological entries can probably be abbreviated if the formative elements cited have their own entry in the body of the dictionary. This is typically the practice for productive elements, such as English -ly, -ish, -ise. But what about unproductive elements that nevertheless figure in the formation of a number of words, such as English a- (in, on) of aboard, asleep, or Kaytej -rrke, -le? They could be alphabetised along with the words in the body of the dictionary as is done in many dictionaries of English, or listed in a separate place at the beginning or end of the dictionary (as is the practice in some etymological dictionaries of French), or both, or perhaps explained each time they occur in an etymological entry.

It is desirable to include only reasonably certain etymologies and to avoid giving etymologies that are speculative. Nevertheless, where an etymology that is given is less than certain, some indication of its degree of probability of being correct should be given, by using words such as 'probably' or 'possibly/perhaps' or some notation such as ? or ?? (as is done by Collinder in his Uralic etymological dictionary).

Why should etymological information be included in Australian dictionaries at all? One superficial reason is that European language dictionaries normally give such information. Secondly, etymologies are of interest to comparative linguists. In fact, they are the basis for all comparative linguistic work. Thirdly, anyone interested in cultural contacts between Aborigines and non-Aborigines<sup>8</sup> will be interested in having identified the words borrowed from English<sup>9</sup>, Macassarese<sup>10</sup>, Chinese, 'Afghan', and so on<sup>11</sup>.

Fourthly, loanwords and cognates from neighbouring languages especially should be included;<sup>12</sup> then the etymological component can serve some of the functions of a comparative dictionary (see above). It can help literate speakers learn the equivalent words in other languages in the area and make

learning the language easier for those who know a neighbouring or closely related language.

Fifthly, the etymologies should help anyone, native speaker or otherwise, who is interested in understanding the language better to do so, since many of the word formation processes would be illustrated and relations between derivatives of the same elements would be revealed.<sup>13</sup>

## 5. SOME KAYTEJ ETYMOLOGIES

The Kaytej language (also spelled Kaititj), spoken around Barrow Creek and Warrabri, N.T., belongs to the Arandic family along with Aranda in its various dialects, which are listed here with the abbreviations used in this section: Anmajirra (Anm), Alyawarra (Aly), Eastern Aranda (EAR), Akar-Akiytjar (Ak), Antekerrephe (Ant), Southern Aranda (SAR), Western Aranda (WAR), and Mparntwa Aranda of Alice Springs (Mp). For the internal relationships between these regional varieties (except Mp and Ant), based on lexicostatistical analysis, see Hale 1962.<sup>14</sup> The principal languages neighbouring Arandic on the west are Warlpiri (Wlp) and Western Desert (WD).

The sample entries which follow illustrate the tracing of Kaytej words to (1) reconstructed earlier forms, with citation of cognates in the Arandic family and beyond; (2) a source in a foreign language, especially the neighbouring Warlpiri; or (3) its formation from elements in the language, as shown either by internal reconstruction within Kaytej itself or comparison with the dialects of Aranda. The sound changes that are presupposed are not justified here, but can be supported by more examples. The sources from which cognates are taken are not given here. Arandic cognates come primarily from Hale's 'Arandic Word List',<sup>15</sup> and the Ngayarda and Kanyara-Mantharta reconstructions are taken from O'Grady 1966 and Austin 1981 respectively.

As to orthography, I have changed the spelling of my sources where necessary so that *rr* and *r* are used consistently to indicate a rhotic trill/tap and approximant respectively, and voiceless stop symbols to represent non-contrasting stops. Note that *ty* (for Arandic), *tj* and *j* are equivalent notations for the lamin(opalat)al stop. Within Arandic, *e* always represents [ə], and in Kaytej, *h* stands for a weak unrounded back glide, which was probably derived historically from \*w.

### (1) AHE 'fight' < \*hot?. Derivatives:

1. *ah-ayte-* > *aayte-* 'become angry': formed from AHE plus -AYTE-;
2. *aherrke* > *aarrke* 'sun': formed from AHE \*'hot' plus -RRKE<sup>16</sup>;
3. *ahpertewe* > *aapertewe* 'summer, hot season': formed from AHE \*'hot' plus -pertewe?;
4. *awelengke* 'dangerous': cognate with Aly, Ak *ahelwengke*; cf. Ar, Anm *ah.kngerre* (*kngerre* 'big'): formed from AHE ~ AWE plus -LWENGKE.

Here is a family of words presumably derived from the same base, *AHE*, assuming an earlier semantic range 'hot', 'angry', 'fight'. Note that the analysis of *ahayte-*, *aherrke*, and *awelengke* is justified by the fact that those parts of the word remaining after *ah(e)* is removed recur elsewhere in similar functions, and that for *awelengke*, moreover, the corresponding word in Aranda combines *ahe-* with a different element. The *w* of *awelengke* suggests that the prototype of *AHE* contained a *w* (hence *\*CVwV*) which failed to shift to *h* when it was followed by a successive rounded segment (I am assuming that *-lwengke* here becomes *-lengke* after the preceding *w*).

Note also that the sequence *ahe-* in *aherrke* and *aherpertewe* is pronounced as *aa* by some (especially younger) speakers. The symbol > indicates that the variant pronunciation is derived from an earlier sequence *ahe*.

- (2) *AKNGWE* 'deaf, mad': = Aly; probably < *\*wanga*: cf. Wlp *wanga.marra* 'crazy', WD *wanga.rta* 'crazy'.

The = sign indicates that Alyawarra has a cognate identical in form. The Warlpiri and Western Desert words, compared to each other, suggest an analysis of both into *wanga* plus a further element. Note the use of a period within a word to signal a nonproductive morpheme boundary (following the practice of O'Grady 1966).

- (3) *ALEKE* 'dog' < *\*maliki*: cf. Wlp *maliki* 'dog'.

*\*maliki* here is reconstructed only as pre-Kaytej. It cannot be reconstructed for any known proto-language, since it occurs only in Kaytej and (especially Eastern) Warlpiri. It may, of course, have been borrowed from one of those languages into the other.

- (4) *ALENYA* 'tongue': = Aly, EAr; WAR *lenya*; cognate with WD *jarliny*, Pintupi *jarlinypa*, Warlpiri *jarlanypa*, Palyku (Ngayarda) *jalany*, PKM *\*thalany*.

Note that the Arandic cognates are cited first, then cognates from languages further afield. The Proto-Kanyara-Mantharta is cited from Austin 1981. No proto-form is reconstructed, although one could be reconstructed, subject to some uncertainties about the initial consonant (*th* or *ty*), the second vowel (*a* or *i*), and possibly the second consonant (*l* or *rl*); the *-pa* or Wlp and Pintupi is clearly an innovation, as may be the *-e* of all the Arandic forms. This item is included in Capell's 'Common Australian' vocabulary (Capell (1956:89)) and reconstructed by Dixon (1980:100) as *\*jalany*.

- (5) *-ARENGE*: possessive suffix, 'belonging to'.

This productive suffix is listed separately, so that it can be referred to briefly in etymologies like that of *atnkwarenge* (No. 11)

(6) *ARRE* 'mouth': cf. *Aly*, *Anm*, *EAR*, *SAR* *arr.akerte*, *WAR* *rr.akerte*, formed from (*A*)*RRE* plus *-akerte* 'having' (cf. *K* *erlpe* 'ear' vs. *SAR* *ilp.akerte*); < *PAR* *\*erre*; cognate with *Warlpiri* *lirra* 'mouth', *Walmajarri* *lirra* 'mouth, teeth', *Gurindji* *lirra* 'tooth'; *PNgayarda* and *PKM* *\*yirra* 'tooth'.

Derivatives:

1. *arretwe*<sup>17</sup> 'beard': *ARRE* plus *-twe* ? Cf. *Aly* *arr.anke*, *Anm* *arr.alte* (from *\*arre-* plus *alte* 'hair'). cf. *Mp* *arrote* 'chin'.
2. *arreympempe* 'lip, beak': possibly formed from *ARRE* plus an adapted form of *pinpinpa*; cf. *Wlp* *lirra-pinpinpa* (formed from *lirra* 'mouth' plus *pinpinpa* 'flat and thin').

Further cognates for *arre* are citable, cf. Capell (1956:89) and Dixon (1980:100). The etymon can probably be reconstructed back to Proto-Australian, although there is some doubt as to what was the original initial consonant: *l*, *d*, or *r* (Dixon *ibid*). Of course, it is impossible to know the initial consonant of the pre-Arandic form. Note that Arandic with *Warlpiri* (and some other northern desert languages) has shifted the meaning of the word from the more widely attested 'tooth' to 'mouth'. Note further that the Kaytej word for 'beard' is justifiably analysed into two elements, not only because of formal similarity to *arre*, but also because of the parallel formation elsewhere in Arandic.

(7) *ARRPWERE* 'butcherbird' *arrpwere alkenhe* 'magpie', literally 'big butcherbird': = *Aly*, *EAR*; *SAR* *urrpere*; < *PAR* *\*urrpere* < *\*kurrparu*: so *Pittapitta*, *Warlpiri*, *Western Desert*, *Watjarri*, *Ngarluma*; *Yindjibarndi* *kurrwaru*; *Walmajarri* *kurrparu.paru*; *Proto-Mantharta* *\*kurlparu*, *Palyku* *kurrparturtu*, *Arabana* *kurrparlu*, *Mangarayi* *korrrporlo.ɔmin*, *Mara* *kurrurtu.kurrurtu*, *Ngandi* *a-gurruwurduk*, *Nunggubuyu* *kurrpurtuk* (female), *kurrurtu(k)* (male), *Warrgamay* *kupura*, 'Wakaman' (Sutton 1976:119) *kopor(d)a*, *Kuku-Yalanji* *kurrpurru.pun*, *Mayi-Kulan/-Kutuna* *kurrartapu*.

Note the radical sound changes in Arandic. The meanings of the cognates vary between 'magpie' and 'butcherbird'. Cognates have been found right across Australia from southwest (*Watjarri*) to northeast (*Kuku-Yalanji*), even in several so-called non-Pama-Nyungan languages of the north (*Mangarayi*, *Mara*, *Ngandi*, *Nunggubuyu*). The Kaytej word obviously continues an earlier form *\*kurrparu*, which is widely attested, although a number of languages suggest that the third consonant might have been originally *rt* rather than *r*. There is also uncertainty as to whether the second vowel was originally *a* or *u*.

(8) *ARTETYE* 'mulga': = *Aly*, *EAR*; *WAR* *irtetye*; *SAR* *rtetye*; < *PAR* *\*ertetye*; → *Warlpiri* *wardiji*.

The Kaytej word (or possibly the *Anmajirra* if identical in form) was presumably borrowed into *Warlpiri*, with the addition of an initial *w*.

- (9) *ATHEYMPE* 'ironwood tree': (→ *Waramungu wattimpi*); *Anm tyarnpe* (→ *Warlpiri wajarnpi yajarnpi*); *WAr tywarnpe* (→ *Pintupi yutjanypa*); < \**utyarnpe*. Possibly cognate with *Aly*, *EAr athenge* < \**uthe.nge* ?

It appears that three different forms of the Arandic word have been lent to neighbouring languages to the north and west. The eastern Arandic word *athenge* is hard to reconcile with the western forms, unless one assumes that they represent two different derivatives from an original \**utye* ~ \**uthe*.

- (10) *ATNHELWENGKE* 'emu': formed from *ATNHE* 'emu belly feathers, down' (cf. *Warlpiri wanya*) plus *-LWENGKE* (see No. 19).

This analysis is supported by the fact that the Aranda dialects have for 'emu' an unrelated monomorphemic word, *ankerre* or *ileye*. It is not clear whether *Alp wanya* is a cognate or a loan.

- (11) *ATNKWARENGE* 'night': formed from *ATNKWE* 'asleep' plus *-ARENGE* (see No. 5).

(12) *AYTE-*

1. verb, 'to come up, grow';
2. productive formative of complex verbs: 'go away'; e.g. *are-l-ayte-* 'see and go away' (*ARE-* 'see').
3. non-productive formative of complex verbs; e.g. *ape-y-ayte-*: 'come up, arrive' (*APE-* 'move'); *ah-ayte-* 'become angry' (*AHE* 'fight'). [Cognate with *Wlp pardi-* 'to arise, grow', also found in compound verbs such as *jarra-pardi-* 'to burst into flame' (*jarra* 'flame')].

This is an example of a complete dictionary entry containing supplementary etymological information.

- (13) *AWELENGKE* 'dangerous', "cheeky". See *AHE* and *-LWENGKE*.

This is an example of cross-referencing of a word listed as a derivative in another entry (No. 1).

- (14) *ELTYE* 'hand', pan-Aranda *iltye* < *PAR \*eltye* < \**miltyV* : *WD miltji* 'fingernail'; Proto-Ngayarda \**miltyu* 'nail'.

Note that the final vowel of the pre-Arandic form is not established. Note also the semantic shift that has taken place in Arandic: 'fingernail' > 'hand'.



(15) *ELYPWERALKE* 'wild honey': formed from *elypwere* 'hollow tree' (cf. Wlp *wilypiri*) and *\*alke* 'big'? (cf. *alke.nhe* 'big' and *alke.re* 'older brother'). Cf. the corresponding forms: Aly *eylper.alkere*, EAr *arweng.alkere*, Anm, WAr, SAr *urlt.ampe*, formed from *urlte* 'hollow tree' (SAr, EAr), plus *ampe* 'child' (EAr, Aly)? A formant *-ampe* recurs in other words denoting kinds of honey, such as *yerrampe* 'honey ant' and *antyeampe* 'nectar from a bush flower'; corresponding independent forms *yerre* and *antye* occur in Mp (D. Wilkins, p.c.).

Note that wild honey is found in hollow trees. The synonyms in the Aranda dialects support a bi-morphemic analysis, although the original sense of K *-alke* remains unclear.

(16) *ERLWENTHE* 'flame': formed from *ERLWE* 'eye' plus *-nthe* 'fire'?; cf. EAr, SAr, WAr *alknge.nthe*, formed from *alknge* 'eye' plus *-nthe*, and Mp *ntheyle-*, EAr *alkngentheyle-* 'to light a fire' (*-eyle-* causative).

(17) *KWERLEKEKE* 'diamond dove': ← Wlp *kurlukuku*

(18) *KWETERE* 'nullanulla': ← Wlp or Waramungu *kuturu*.

Both (17) and (18) are examples of loanwords from Warlpiri. The Kaytej pronunciation is roughly similar to that of Warlpiri in spite of the divergent spellings.

(19) *-LWENGKE* [-*luŋkə*]: suffix that forms nominals with a meaning 'characterised by'.

This is listed separately in the dictionary so that reference can be made to it in the etymologies of words like *AWELENGKE* (see No. 1) and *ATNHELWENGKE* (No. 10).

(20) *MPWERNE* 'spouse, wife's brother': = Aly, Ak, EAr, Anm; WAr, SAr *mparne*; only the meaning 'wife's brother' is attested elsewhere in Arandic; < PAR *\*umperne* < *\*ngumparna*: Warlpiri, Pintupi *ngumparna* 'wife's brother', Gurindji *ngumparna* 'spouse, brother-in-law', Mara *wumparna-* 'my/your brother-in-law', *ngumparnarra* 'his brother-in-law'.

Note the extensive phonological changes in Arandic (some of which are shared with (7) *arrpwere*). The meaning 'wife's brother' is the most widespread, but Kaytej and Gurindji include the meaning 'spouse'.



(21) *NGAYELE* 'hungry': = Anm: formed from *ngaye-* plus *-le*. For the elements, cf. Aly *ngay.akwe* (and Ak *unernk.akwe*) and SAR *nerke.le*. See also *NTYERRELE* 'thirsty'.

Although the meaning of the elements cannot be discerned, the synonyms in the Aranda dialects and the similarly formed 'thirsty' justify the analysis.

(22) *NTY(W)ERRELE* 'thirsty': formed from *\*(u)ntyerre* plus *-le*: for the elements cf. Ant *untjerr.akwe* (and Aly *angketh.akwe*), SAR *ngkethe.le* (and Anm *arweke.le*). Possibly cognate with EAr, Ak, Anm *antywe-*, WAr, SAR *ntywe-* 'to drink' < *\*untye-*.

(23) *-RRKE*: unproductive suffix used in nominal formations, e.g. in *aher.rke* 'sun' (*AHE* \*'hot'), *athe.rke* 'green grass' (*athe* 'grass').

If *aherrke* and *atherrke* had separate entries, a cross-reference here would suffice.

#### FOOTNOTES

1. See Malkiel 1957 for a typology of etymological studies.
2. For the Paman family, lists of several hundred reconstructions are already available (see Sommer 1969, Hale 1976a and 1976b, Black 1980), although the cognates are not all listed in the same place, as in an etymological dictionary.
3. Austin (this volume) mentions the projected preparation of such dictionaries for two groups of Western Australian languages. Somewhat similar in conception is a dictionary of all the dialects of a language, such as the 'pan-Yolngu-Matha' dictionary planned by Zorc (see Zorc, this volume), or Dixon's Dyirbal dictionary (Dixon (1980:98)).
4. With reference to Latin etymologies, Meillet says in the Preface (p. viii) to his and Ernout's etymological dictionary:  
 "C'est n'est pas donner une étymologie que de rattacher un mot latin à une 'racine' indo-européenne."

5. *The American Heritage Dictionary* has a "systematic policy of tracing each word to its prehistoric Indo-European [i.e. Proto-Indo-European, HK] origin whenever possible" (p. xlviii). The individual etymological entries include cross-reference to an Appendix of Indo-European Roots, prepared by the Harvard Indo-Europeanist Calvert Watkins, "listing every Indo-European root ancestral to at least one English word, with details of its descent, cross-referred throughout to the individual etymologies in the body of the Dictionary" (p. xx).

6. See Haviland 1974.

7. Cf. *The American Heritage Dictionary*, p. xlviii: "The word 'from' is used to indicate origin of any kind - by inheritance, borrowing, derivation, composition ..."

8. Cf. the use made of Aboriginal vocabularies by the historian Reynolds (1982:40-43, 206 note 6).

9. In Hershberger and Hershberger 1982, words borrowed from English are marked 'English loanword'. Likewise Austin's Southern Pilbara dictionaries will indicate the source of words borrowed from English (Austin, this volume).

10. See Walker and Zorc 1982 for Macassarese and other Austronesian loanwords in Yolngu.

11. Heath's *Nunggubuyu Dictionary* mentions the source of words borrowed from English, Kriol, or nearby Australian languages, but this information is not given as part of the etymological commentary (see note 13). Zorc's Yolngu-Matha dictionary will indicate the source of loans from non-Australian languages, largely English and Indonesian languages (Zorc, this volume).

12. Dixon's Dyirbal dictionary will include words of neighbouring languages which may be the source of or cognates "especially of forms which occur in only one peripheral Dyirbal dialect" (Dixon, 'Dyirbal thesaurus and dictionary', handout for the Workshop on Australian Aboriginal Lexicography).

13. Heath's *Nunggubuyu Dictionary* gives the internally-reconstructed morphemic analysis of words, in an etymological commentary prefaced by 'Etym.' (Heath (1982:xii-xiii)).

14. Hale also includes Lower Aranda (LoAr) as a separate Arandic language. No cognates from LoAr are cited here.

15. Mparntwa forms were supplied by David Wilkins (personal communication).

16. Some Kaytej speakers have reportedly referred to the sun (in English) as "that hot bugger".

17. Depending on the orthographic conventions adopted, this word might be spelled *arrwete*: it is pronounced as [arrutu].

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APPENDIX: SELECTED LIST OF ETYMOLOGICAL AND COMPARATIVE DICTIONARIES

NOTE: Comparative Dictionaries are marked (C).

1. INDO-EUROPEAN

POKORNY, J.  
1959-69 *Indogermanisches etymologisches Wörterbuch.* 2 vols.  
Bern/Munich: Francke.

WALDE, A. & J. POKORNY  
1927-32 *Vergleichendes Wörterbuch der indogermanischen Sprachen.* 3  
vols. Berlin/Leipzig: Walter de Gruyter.

(C) BUCK, C. D.  
1949 *A dictionary of selected synonyms in the principal Indo-European languages: a contribution to the history of ideas.* Chicago: University of Chicago Press.

2. LATIN

ERNOUT, A. & A. MEILLET  
1959 *Dictionnaire étymologique de la langue latine: histoire des mots.* 4th. ed. Paris: Klincksieck.

WALDE, A. & J.B. HOFMANN  
1938-54 *Lateinisches etymologisches Wörterbuch.* 2 vols. Heidelberg: Carl Winter.

3. ROMANCE

MEYER-LÜBKE, W.  
1935 *Romanisches etymologisches Wörterbuch.* 3rd ed. Heidelberg: Carl Winter.

(a) OLD FRENCH

BALDINGER, K., J.D. GENDRON, & G. STRAKA  
1971 *Dictionnaire étymologique de l'ancien français.* Tübingen: Niemeyer/Quebec: P.U. Laval.

(b) FRENCH

BLOCH, O. & W. VON WARTBURG  
1968 *Dictionnaire étymologique de la langue française.* 5th ed.  
Paris: Presses Universitaires de France.

DAUZAT, A.  
1938 *Dictionnaire étymologique de la langue française.* Paris: Larousse.

GAMILLSCHEG, E.  
1928 *Etymologisches Wörterbuch der französischen Sprache.* Heidelberg: Carl Winter.

## (c) ITALIAN

BATTISTI, C. &amp; G. ALESSIO

1950-57 *Dizionario etimologico italiano*. 5 vols. Florence: G. Barbèra.

## (d) SPANISH

COROMINAS, J.

1954-57 *Diccionario crítico etimológico de la lengua castellana*. 4 vols. Bern: Francke.

GARCÍA DE DIEGO, V.

1954 *Diccionario etimológico español e hispánico*. Madrid.

## (e) PORTUGUESE

MACHADO, J.P.

1952-59 *Dicionário etimológico da língua portuguesa*. 2 vols. Lisbon: Confluência.

## (f) RUMANIAN

CIORANESCU, A.

1966 *Diccionario etimológico rumano*. Tenerife: Biblioteca Filológica.

PUSCARIU, S.

1905 *Etymologisches Wörterbuch der rumänischen Sprache*. Vol I: *Lateinisches Element*. Heidelberg: C. Winter.

CIHAC, A.

1870-79 *Dictionnaire d'étymologie daco-romane; I. Eléments latins comparés avec les autres langues romanes; II. Eléments slaves, magyars, turcs, grecs-moderne et albanais*. 2 vols. Frankfurt am Main: L. St.-Goar.

## (g) MACEDO-RUMANIAN

PASCU, G.

1925 *Dictionnaire étymologique macédo-roumain; I. Les éléments latins et romains; II. Les éléments grecs, turcs, slaves, albanais, germaniques, hongrois, néologismes, créations immédiates, obscurs*. Iași: Cultura Națională.

PAPAHAGI, T.

1963 *Dicționarul dialectului aromân, general și etimologic. Dictionnaire aroumain (macédo-roumain) général et étymologique*. Bucharest: Ed. Acad.

## (h) SARDINIAN

WAGNER, M.L.

1957-64 *Dizionario etimologico sardo*. 3 vols. Heidelberg: C. Winter.

(i) SICILIAN

VARVARO, A.  
1975 *Vocabulario etimologico siciliano*. Palermo.

(j) LADIN

KRAMER, J.  
1970 *Etymologisches Wörterbuch des Godertalischen (Dolomitenladinisch)*. Cologne.

(k) DALMATIAN

ELMENDORF, J.V.  
1951 *An Etymological Dictionary of the Dalmatian Dialects of Veglia*.  
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4. GERMANIC

(a) GOTHIC

FEIST, S.  
1939 *Vergleichendes Wörterbuch der götischen Sprache*. 3rd ed.  
Leiden: E.J. Brill.

(b) OLD NORSE

DE VRIES, J.  
1961 *Altnordisches etymologisches Wörterbuch*. Leiden: Brill.

(c) NORWEGIAN

FALK, H. & A. TORP  
1960 *Norwegisch-Dänisches etymologisches Wörterbuch*. 2 vols. 2nd  
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HELLQUIST, E.  
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Berlin: Walter de Gruyter.

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1952 *A concise German etymological dictionary*. London: Routledge and  
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## (g) DUTCH

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1949 *Etymologisch woordenboek der nederlandse taal*. 3rd ed., by Van Wijk, N. and C.B. Van Haeringen. The Hague: Martinus Nijhoff.

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HOLTAUSEN, F.

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1966 *The Oxford dictionary of English etymology*. London: Oxford University Press.

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1966-67 *A comprehensive etymological dictionary of the English language*. 2 vols. Amsterdam/London/New York: Elsevier.

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1911 *A concise etymological dictionary of the English language*. Rev. ed. London: Oxford University Press.

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1967 *An etymological dictionary of modern English*. 2 vols. New York: Dover Publications.

## 5. CELTIC

STOKES, W. &amp; A. BEZZENBERGER

1894 *Urkeltscher Sprachschatz*. Göttingen.

## (a) OLD IRISH

VENDRYÈS, J.

1959-60 *Lexique étymologique de l'irlandais ancien, A, M-P*. Dublin: Dublin Institute for Advanced Studies/Paris: Centre National de la Recherche Scientifique.

## (b) IRISH

MacBAIN, A.

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(c) BRETON

HENRY, V.

1900 *Lexique étymologique des termes les plus usuels du breton moderne.* Rennes.

6. BALTO-SLAVIC

TRAUTMANN, R.

1923 *Baltisch-slavisches Wörterbuch.* Göttingen: Vandenhoeck and Ruprecht.

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FRAENKEL, E.

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(c) PASHTO

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(d) SHUGHNI GROUP

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13. SANSKRIT

MAYRHOFFER, M.

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## 19. SEMITIC

COHEN, D.

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Paris/The Hague: Mouton.

## (a) HARARI

LESLAU, W.

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